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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Story of the Week
Quotes of the Week
How They Keep 'em Down on the Farm
Design Problems Solved Ingeniously
Fontaine to the Rescue Again
Upward Progress for Our Industry
Herrick Laboratory Futures
Purdue's Goals

Story of the Week

"Forty years ago," ruefulled grandfather, "when I kissed my bride in front of the minister, I'd never have believed it."

"Believed what?"

"That today I'd be gumming peanut brittle to please a 12-year-old Girl Scout."

Quotes of the Week

After a man makes his mark in the world, a lot of people will come around with erasers.—FRANK G. MCINNIS.

Speak well of your enemies. You made 'em.—ALFRED BRANDT

Education is designed for the enjoyment of mankind. If knowledge makes an individual depressed and melancholy, or gives him an anti-social outlook, then education has failed.—FREDERICK DUPAS.

How They Keep 'em Down on the Farm

September, 1959, marks an air conditioning and refrigeration milestone at Purdue university. This month its Controlled Climate Institute will be in full operation.

Investigations by Purdue university into air conditioning's *health effects* began on its swine farm many years ago. Later on, cows, sheep, and poultry were studied under temperature-humidity-control conditions there.

Eventually Purdue researchers discovered that any number of biological variables—rate of weight gain, breeding cycle, feeding efficiency, etc.—were profoundly affected by temperature changes in the environment of these "food animals."

Professor Bill Fontaine thereupon was invited by Curtis Brown (a 1926 mechanical engineering alumnus of Purdue) to work during one summer with Tecumseh Products, the world's largest producer of hermetic refrigeration compressors and condensing units.

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At ARI Conference

Authorities To Get Down to Cases On Cooling Product Applications

WASHINGTON, D. C.—Names of four speakers who will appear at the ARI "Conference Session" scheduled at Atlantic City, N. J., on Nov. 3, as a special feature of the 11th Exposition of the Air Conditioning and Refrigeration Industry, were made public recently by R. H. Luscombe, chairman of the 11th Exposition Committee.

The conference is planned to highlight dramatically the part that applications of the refrigeration cycle—in both refrigeration and air conditioning—play in America's present mode of life, and to point out their essentiality to the health, productivity, and defense of the nation.

The speakers, authorities in their fields, are expected to get down to cases on industry problems. They will go into various applications of mechanical cooling and the need for cooperation between the industry and users of its products. They are:

- President Harold J. Humphrey of the National Association of Frozen Food Packers, whose presentation will cover the vital necessity for refrigeration equipment in today's food distribution scheme, the need for proper equipment in all phases of food markets, from production and storage through

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Tenney Buys Kirsch Coil Div.

UNION, N. J.—Tenney Engineering, Inc. of Union, N. J. and Baltimore, Md., has purchased the Copper & Aluminum Coil Div. of Kirsch Co., Sturgis, Mich., it was announced by Monroe Seligman, president of Tenney.

At the same time Seligman also stated that Tenney is now in the process of acquiring a new 75,000-sq. ft. plant, its third, for the production of refrigeration coils.

"The most important outgrowth of the purchase is the widening of Tenney's coil line to include ⅜, ½, and ⅝-in. sizes in a wide variety of finned tube combinations to fit virtually every O.E.M. application," the announcement said. "It is expected that the increased, combined production facilities will result in a more competitive price structure for the entire new line.

"In order to effect an uninter-

(Concluded on Page 4, Col. 5)

Jamos Gears for '60 Vornado Auto Cooler

FLUSHING, N. Y.—Jamos Industries, Inc., manufacturer of "Vornado" automobile air conditioners, announced that its plant has been set up, the 1960 designs have been finalized, and orders are being placed with suppliers in order to continue production of the Vornado unit on a full-scale basis.

In addition to the staff of engineers who originally joined Jamos Industries from O. A. Sutton Corp., Jack Kuhlman, who was in charge of production for Sutton, will join Jamos as its production engineer.

T-H Index

Is 'Pretty Sure' To Return To N. Y. C.

NEW YORK CITY—Although the local Weather Bureau recently discontinued issuing Temperature-Humidity Index reports, Ernest J. Christie, meteorologist in charge of the local bureau, is "pretty sure" the practice will be resumed next summer since more and more individuals or organizations apparently are making use of it.

And as of a recent date, the Weather Bureaus in Chicago and New Orleans were still using the system.

Christie said the index was

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RSES Expects Big Turnout for 22nd Annual Convention Oct. 30-Nov. 2

CHICAGO—Expecting one of the largest turnouts for an annual meeting, the Refrigeration Service Engineers Society has arranged an outstanding educational program for its 22nd annual convention to be held Oct. 30 through Nov. 2 at the Ambassador hotel in Atlantic City, the group announced.

The convention will meet just prior to the opening of the 11th Exposition of the Air Conditioning and Refrigeration Industry, concluding its final session as the exposition opens on Nov. 2.

Some of the subjects to be covered in the four-day meeting are servicing ice cream and milk shake dispensing freezers, recent advances in hydronic heating and cooling, taking guesswork out of estimating costs in refrigeration installations, water chillers and their controls, oil migration in Refrigerant-12 and 22 systems, food store air-cooled condensing room design, and thermoelectric refrigeration.

Registration for the convention starts at 9 a.m. on Friday, Oct. 30, with the convention formally opening at 1 p.m. to receive reports of the association's progress and future plans.

Another business session will be held on Sunday morning, Nov. 1, for the election of officers and directors and to receive convention committee reports.

"Information Please" sessions

(Concluded on Page 35, Col. 3)

Gibson Bows '60 Lines In Puerto Rico

SAN JUAN, Puerto Rico—Some 3,000 conventioneering dealers and distributors, with wives and children, are getting their first look at the 1960 lines of Gibson air conditioners, dehumidifiers, refrigerators, freezers, and ranges in a holiday setting here.

Jubilant C. J. Gibson, Jr., president, informed the conventioneers that Gibson Refrigerator Co., Div. of Hupp Corp., set new sales records in air conditioners and refrigerators this year and anticipates an over-all 20% increase in 1960 for all product lines.

Air conditioner sales this year are 65% ahead of 1958 and refrigerators 126.5%. Dehumidifier sales were up 35%, freezers 98%, and ranges 9%.

Gibson's 1960 room air conditioner line will be divided into five series, with all models in each series having the same cabinet dimensions.

Main promotional and merchandising emphasis will be placed on the model 71-S in the "Economy" series. It features Gibson's automatic air-sweep. This is the first time the air-sweep has been incorporated in a unit in the low price range, according to W. C. Conley, vice president in charge of Gibson sales.

The 71-S is a 1-hp., 7.5-amp, 110-volt unit with thermostat, two-speed fan, and "Perma-Chem" filter to remove airborne germs. It is a plug-in type, requiring no special wiring under normal conditions.

All models in the Economy series measure 15⅝₃₂ in. high, 23¹¹⁄₁₆ in. wide, and 18³⁄₁₆ in. deep. All have the Perma-Chem filter as do all models in the entire line.

Other units in the line include the A-6102, a 7-amp, 230-volt unit; the A-6171, a 7.5-amp, 110-volt unit; and A-6111, a 12-amp, 110-volt unit. All have 1-hp. compressors.

The lone model in the "Personal" series is a 7.5-amp, 110-volt, plug-in unit measuring 12½ in. high, 17¾ in. wide, and 15¾ in. deep.

The "Suburban" series consists of three models measuring 17¹³⁄₁₆ in. high, 23¹³⁄₁₆ in. wide,

(Concluded on Page 45, Col. 1)

'59 Gas Heating Sales May Top 1.3 Million

NEW YORK CITY—Manufacturers of gas-fired central heating equipment, including warm air furnaces, boilers, and conversion burners, expect their 1959 sales to reach a new peak of 1,317,600 units.

This is indicated in a mid-year survey of manufacturers conducted by Edward R. Martin, director of marketing and statistics for the Gas Appliance Manufacturers Association.

Consensus of heating equipment producers is that their unit sales in 1960 will rise to 1,375,100. If all manufacturers perform up to present expectations, the 1960 total could go to 1,482,300 units.

Cool, Calm, and Collecting

Retiring IRS Aid Suggests Air Conditioning for Revenue Boys

PHILADELPHIA—Air conditioning as a means of boosting the efficiency of office personnel got quite a boost here recently.

The *Bulletin* gave prominent play to a story headlined "Retiring IRS Aid Wants Tax Collectors Kept Cool."

Samuel H. Levy, who retired recently as audit division chief of the Internal Revenue Service here, listed air conditioning as No. 1 on his two-item list for improving local IRS efficiency.

He said air conditioning is the best way to keep federal income tax collectors cool, calm, and collecting. And it would be good for the taxpayers, too, he added. "Keep them cool and you have part of the problem licked."

Levy's second suggestion was to put all scattered IRS functions here under one roof.

At present, the local IRS is quartered on the 5th and 6th floors of the Federal Building, the 11th, 12th, and 13th floors of the Gimbel Building at 9th and Chestnut Sts., the Bankers Securities Building, and No. 2 Penn Center.

The Federal Government has talked about putting up new quarters or air conditioning the Federal and Gimbel buildings' space but never seems to have the money, it was noted.

During a recent hot spell, Levy said, the thermometer registered over 100° in the Gimbel Building space.

"To get good work out of good employes," he said, "you must give them comfort. And taxpayers, too, are not always the happiest people to deal with."

A veteran of 42 years in Federal service, Levy joined IRS in 1923, came here later as an IRS agent, and became chief of the local audit division in 1954.

Weatherwise, Workers Might Have Fared Better Working on Labor Day

CHICAGO — The *Chicago Daily Tribune*, in its Sept. 8 editions, put this "lead" on a weather story headlined "Mercury Hits 96, Ties Mark —Discomfort Index at Wilting 83":

"Labor Day was the kind of holiday that almost had workers wishing they were back in their air conditioned offices, factories, and stores."

In Los Angeles

Mechanical Engrs., Cooling Contractors Agree on Plan-Signing Code Requirement

LOS ANGELES—Mechanical engineers and refrigeration and air conditioning contractors have reached agreement on a joint recommendation to the Los Angeles City Council on the proposed requirement of the city's heating, ventilating, and air conditioning code that mechanical engineers sign plans on larger work.

The Refrigeration & Air Conditioning Contractors Association of Southern California reports that Ralph Westcott, representing the consulting engineers, and Jack Carney, Don Kissell, and Henry Ely, representing the contractors, agreed to recommend to the city council "a solution to what at times had become a bitter difference of opinion" about the plan-signing proposal.

"The contractors had taken the position that the signing of plans by mechanical engineers would cause a delay of two or three weeks in obtaining permits for the work, and that historically the contractors had done a great deal of design work," it was pointed out.

"The joint solution suggested is that if the plans for larger work are signed by mechanical engineers, licensed by the State of California, the Board of Building and Safety will give approval of the plans without checking them. This will eliminate delays in obtaining the permit, and cut down on the costs of the Building and Safety Department.

"As a practical result most plans will probably be signed by mechanical engineers. However, on such larger work, licensed contractors can submit plans and specifications without the signature of the licensed mechanical engineer, but they will be checked by the Department of Building and Safety. This reserves to the contractors their historical position in the industry."

The bulletin continued:

"This mutual understanding of the mechanical engineers and the contractors breaks a log jam which has been holding up good relations between the two groups; plans are already under way for joint meetings . . . which, we believe, will result in lasting good to the industry."

For Little Rock

GSA To Study Merits Of Gas, Electric Air Conditioning

WASHINGTON, D. C. — The General Services Administration has ordered an unbiased survey to determine whether a gas or electric air conditioning system is better at Little Rock, Ark.

The question arose because of close bids on each system the GSA received on a proposed central air conditioning system for a $6,000,000 government Office Building at Little Rock.

The contract award was being held up while GSA determines which system is best for the Government.

Two Dallas, Texas firms submitted the low bids, Robert E. McKee, and J. W. Bateson Construction Co. Each offered a base bid on air conditioning with electricity. And each included an alternate of air conditioning by gas. But one was lower on electricity, the other was lower on gas.

S. Carolina Group Elects J. B. Walker

CHARLESTON, S. C. — The South Carolina Association of Plumbing, Heating & Air Conditioning Contractors climaxed its two-day summer convention here by electing J. B. Walker, of Columbia, as president.

KRAMER UNICON

WAY OUT IN FRONT and deservedly so!

KRAMER's largest UNICON has *50% more* capacity than any other! ▶ New, all aluminum casing ends rust and corrosion. Stands and structural steel are galvanized after fabrication. ▶Time-tested WINTERSTATS prevent low receiver pressure and insure start-up under any weather condition.

Available with horizontal or vertical air flow. Lowest silhouette. ▶ Kramer's UNICON is so quiet it can be used in unlimited multiples. ▶ No one can match Kramer's 20 years of accumulated know-how in air-cooled condensing and no other air-cooled condenser can match the Kramer UNICON—the pioneering leader in the industry.

WRITE FOR BULLETIN

KRAMER TRENTON CO./Trenton 5, N. J.

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

One step ahead!

An alert, interested sales manager will really step out to keep in touch with his customers. Only in this way can he fully appreciate their problems and requirements. Lau backs his efforts with the industry's most complete range of blowers and blower components.

This awareness of customer requirements and the ability to fill them is just one more reason why Lau is the world's number one blower manufacturer. Why not step ahead of competition yourself? Call or write Lau today.

The Lau Blower Company · Dayton, Ohio

Flying Executives To Be Feature of Ads

THE COLEMAN Co.'s use of company-owned planes to quickly cover the heating and air conditioning field will be a feature of another firm's consumer advertising this fall. Above, Jess L. Moore, Jr., general manager, Heating and Air Conditioning Div. of Coleman (left); Renne Rankin, Coleman sales manager (right); and David L. Stavniak, manager of the Wichita branch of National Car Rentals, are shown at the Wichita airport in what will be the main illustration for ads appearing in the *Wall Street Journal, Newsweek, U.S. News & World Report,* and *Fortune*. Both Moore and Rankin are pilots as are eight other executives in the Heating and Air Conditioning Div. All ten of these men are licensed pilots and fly company planes.

J. W. Wilcock To Manage Sturtevant

HYDE PARK, Mass.—James W. Wilcock has been appointed manager of the Sturtevant Div. of Westinghouse Electric Corp. here, it was announced by H. E. Seim, Westinghouse vice president in charge of the Sturtevant Div.

Specializing in air-handling products, the Sturtevant division makes fans, blowers, air washers, heating - ventilating equipment, dehumidifiers, and "Precipitron" electrostatic air cleaners.

Wilcock has served as marketing manager of the division since January, 1956. In 1958, he served as president of the Air Moving & Conditioning Association, and presently is a vice president and director of this industry trade association.

Carrier 3-Month Net Hits $3,247,000

SYRACUSE, N. Y. — Carrier Corp. announced that for the three months ended July 31, orders booked totaled $62,171,000; net sales, $77,645,000; and net profit, $3,247,000 or $1.48 per common share.

In the corresponding period last year, orders booked totaled $53,225,000 and net sales, $68,279,000 with a net profit of $2,701,000 or $1.21 per share.

The figures for the nine months ended July 31 were: orders booked, $184,386,000; net sales, $195,711,000; net profit, $5,963,000 or $2.60 per common share. During the same period a year ago orders booked amounted to $185,409,000 and net sales, $192,591,000. The net profit was $6,030,000 or $2.63 per share of common stock.

Texas Instruments Expanding Versailles Plant by One-Third

ATTLEBORO, Mass.—Expansion of the Versailles, Ky., plant of Texas Instruments, Inc., will begin immediately, E. O. Vetter, TI vice president in charge of the Metals and Controls Div., announced recently.

The 9,600-sq. ft. addition will increase by one third the manufacturing space of the 28,000-sq. ft. plant, he said.

Occupancy of the addition is scheduled for November, according to G. Gilbert Wood, manager of the Commercial Controls Dept. of the M&C Div., which occupies the plant.

The Commercial Controls Dept. is a part of the Spencer Products Group, M&C Div. Its primary products are overheat protectors for electric motors, motor starting relays, and thermostatic controls used in electric appliances and in heating and refrigerating equipment.

Last April, Metals & Controls Corp. of Attleboro was merged into Texas Instruments, with headquarters at Dallas, Texas, becoming TI's Metals & Controls division.

Recold First Half Sales Up 43%

LOS ANGELES — Recold Corp. sales were up 43% in the first half of 1959 as compared to the first half of 1958, it was announced by H. T. (Hy) Jarvis, president.

"Recold sales during 1959 have witnessed a month-by-month increase during the first six months with July sales running 8% ahead of June to set a new dollar volume record," it was reported.

"Early estimates will place total sales for this year at 25% to 30% ahead of 1958 which was the best sales year in the company's history."

Tenney Purchase --

(Concluded from Page 1, Col. 2)

rupted flow of coils to both Kirsch's former customers and to Tenney customers, Tenney will take orders and continue production on the Kirsch Coil Div.'s own dies, tools, jigs, and equipment.

"Key Kirsch personnel have been made available and will aid in the smooth transfer of the Coil Div.'s facilities, production experience, customer goodwill, and engineering research. No delivery lag whatever is expected.

"Tenney's production facilities in the refrigeration field now have a combined replacement value in excess of $750,000. Also included in the purchase was a non-exclusive license on a patent involving a coil manufacturing process."

Wm. L. Parks Dies

ALLIANCE, Ohio — William L. Parks, who followed his father as owner of Parks Heating & Air Conditioning Co. which his son, William C. now operates, died recently at City hospital. He was 59.

PEOPLE PUT THE PLUS IN VIKING TUBING
Viking's position as one of the nation's leading suppliers of thin-wall copper tubing has been achieved through the skill and dependability of the people at Viking.
Since Viking specializes in the manufacture of copper tubing for the refrigeration and air conditioning industry, Viking people are experts in the field. They know the importance of rigid adherence to the highest standards of temper, tolerance and uniformity to meet the customer's most exacting needs and specifications. They gear themselves to the needs of customers . . . adjusting and revising production and delivery schedules to conform to standard or emergency demands.
As a result, Viking quality and Viking service add up to a valuable plus for manufacturers of air conditioning and refrigeration units and coils.
The people at Viking will gladly discuss your copper tube requirements with you . . . you'll find the plus pays dividends.
VIKING
COPPER TUBE CO.
CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

Climate by Chrysler

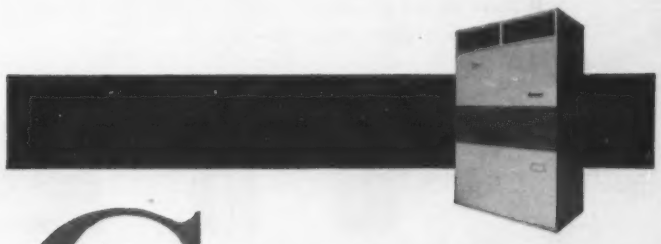
292 ways to make your customers happier and bank deposits bigger

Ever lost an air conditioning sale because you couldn't get the exact unit needed for a job? Ever had customer complaints because you had to over-size or under-size the equipment? Not if you sell Chrysler Air Conditioning!

Only Chrysler offers you 292 combinations of packaged units, compressors, and evaporator-blower combinations to choose from. With the biggest selection in the industry at your command, you can always bid on the best—and most profitable—combination for any job. No more customer complaints. No more lost profits from makeshift jobs.

And Climate by Chrysler gives you more to sell: Special features your customers would have to pay up to $364 to add to ordinary air conditioning are *standard* on Chrysler; the best reputation in the industry for quality and dependability; rock-bottom installation and maintenance costs.

More businesses do more business with Chrysler Airtemp —the company that pioneered packaged air conditioning. Want to see how you can cash in? Contact your local Chrysler Airtemp Distributor . . . today!



CHRYSLER
AIRTEMP

Airtemp Division, Chrysler Corporation, Dept. H-99, Dayton 1, Ohio
Canadian Distributor: Therm-O-Rite Products, Ltd., Toronto, Ont.

Distributor Service Managers

Gibson Announces Winners of Free Trips to 'Fun in San Juan' Meeting

GREENVILLE, Mich. — Nine trips to the Gibson "Fun in San Juan" convention have been awarded to top distributor service managers, according to an announcement by R. W. Rivett, national service manager of Gibson Refrigerator Co., division of Hupp Corp.

The winners are: C. H. Roberts, Sampson Co., Chicago; John Sarrazin, Peninsular Distributing Co., Detroit; D. D. Walcher, Western Appliance Corp, Denver; S. C. Robinson, Hynes Bros., Inc., Washington, D. C.; Everett Harr, Thompson & Holmes, Ltd., San Francisco; Harold Hoover, Harwell Distributing Co., Chattanooga, Tenn; C. E. Cannon, Mitchell Powers Hardware Co., Bristol, Va.; Homer Wittes, Toledo Appliances, Toledo; and Charles Gadau, Ohio Valley Hardware Co., Evansville, Ind.

Selection of the winners was based on participation in the educational program at the factory, distributor and dealer level, efficiency in handling customer complaints, promptness in supplying parts to dealers and service companies, neatness of service facilities, and cooperation with the factory, it was pointed out.

These check points were supplemented by the recommendations of the Gibson regional service managers, according to the announcement.

Versatile Shop on Wheels

Mobile Rig That Hitches Behind Car or Truck Saves Time, Labor for Contractor

HOME-BUILT mobile rig adds to service volume and improves over-all efficiency, believes Gulf Refrigeration & Air Conditioning Co. of Bradenton, Fla.

BRADENTON, Fla. — Saving trips back to the shop and endless time and labor is an air conditioning contractor's mobile rig.

The rig hitches on behind any of the shop cars or trucks and is transported to the job site, and kept there until job completion if necessary.

This 2-wheel trailer unit thus saves the cost of tieing up a truck which could be similarly equipped. The unit was designed basically to handle routine air conditioning installations and repairs, but numerous accessories on it make it a most versatile shop on wheels.

It has facilities for gas and electric welding. A small lathe is part of its equipment. It sports a power hacksaw, pipe threader, electric grinder-emery wheel combination, vises mounted on a steel table, along with cabinets bulging with hand tools.

Lengthy power cords supply the "juice" for the various units. Screwjacks keep the 2-wheel trailer firmly anchored. Open shelf storage provide storage space for stock parts, accessories, and replacement units. These, of course, are restricted to the most generally needed units.

Lengthy pipe sections are carried beneath the platform of the trailer. The platform is constructed of heavy planks atop a steel frame.

This air conditioning contractor—Gulf Refrigeration & Air Conditioning Co. of Bradenton—feels his home-built unit adds to his service volume and improves the over-all efficiency of his operations. The arrangement of equipment and material carried can be readily adjusted to meet varying needs so that every requirement for space, equipment, and supplies may be met by this compact layout.

First Soldering Manual Covers All Phases

NEW YORK CITY — The American Welding Society recently announced the publication of what it said is the first manual on soldering ever published.

Containing 176 pages, 81 illustrations, and 34 tables, the book covers all phases of soldering, combining the theoretical with the practical, it was stated. The manual has 21 chapters.

Chemical composition of hundreds of solders are given, together with flux formulations for the various metals. Copies may be had from the American Welding Society, Dept. T, 33 West 39th St., New York 18, N. Y., at a list price of $5.

"Corrosion." By Frank J. Versagi—50¢ each.

Get your copy Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Streamline® WROT COPPER
SOLDER-TYPE FITTINGS
ALWAYS FIT THE TUBE...

ALWAYS FIT THE JOB!

As the originator of the solder-type fitting . . . the Mueller Brass Co. has perfected the design and production techniques so necessary to produce consistently uniform and dimensionally accurate wrot copper fittings that fit right on every job.

Made from high quality Streamline copper tube, Streamline wrot fittings heat faster, more evenly; make smoother, tighter vibration-proof connections.

Streamline wrot copper fittings are the wise choice for all plumbing, heating, refrigeration and air conditioning systems because of their dependability, ease of installation and long, trouble-free life.

It pays to use the best . . . Order Streamline wrot copper fittings from your wholesaler today.

Write for your new R-159 Catalog today or get a copy at your wholesalers.

235-R

MADE IN U.S.A. TO THE STANDARDS OF AMERICAN INDUSTRY

MUELLER BRASS CO. PORT HURON 13, MICHIGAN

The technician shown here is putting a condensing unit through the low-voltage test to make sure it will start and keep running satisfactorily even with a 10% drop-off in the specified voltage. Four additional such tests assure top performance of every Bendix-Westinghouse condensing unit.

WHY BENDIX-WESTINGHOUSE JOB-TAILORED TESTING CUTS LINE REJECTS AS MUCH AS 75%

Exclusive Bendix-Westinghouse test program licks line reject problem on condensing units

There are two ways to test a commercial refrigeration compressor or condensing unit before shipping it to a customer.

One is to plug it in until it "turns over". Time required: *a few seconds.* Information gained about the product's "performability": *practically none.*

The other way—the Bendix-Westinghouse way—is to run the units for sustained periods of time under simulated operating conditions, checking all phases of their operation. During our exclusive five-point test program we check suction pressure and head pressure, low-voltage operation, performance efficiency and other important operating factors. If there is sub-par performance anywhere along the line, that unit isn't shipped. Time required: *at least 30 minutes each.* "Performability" information gained: *plenty!*

Because *only Bendix-Westinghouse* takes the time and trouble to provide the "product insurance" offered by the second method, Bendix-Westinghouse compressors and condensing units have by far the best record in cutting line rejects—by 75% in some instances. Recently, a freezer manufacturer told us he felt our thorough testing program had enabled him to practically eliminate his long-time problem with rejects.

We think this kind of product dependability is well worth the extra trouble—and expense to us—that this exclusive "run-in" testing requires. Your order will enable us to prove it to your satisfaction, too.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio. Export Sales: Bendix International, 205 E. 42nd Street, New York 17, New York.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

While at Tecumseh, Professor Fontaine met Ray Herrick, and discussed with him his ideas for an engineering laboratory devoted to research into "a controlled climate for all living things."

Ray put up $300,000 to start the project. Spurred by his generosity, officials of the Purdue Research Foundation determined to corral extra funds for the construction and operation of a controlled climate laboratory.

A brick building, 1921 vintage, was chosen as the nucleus from which the new lab was to grow. Two wings were added to the original building; the west wing for mechanical engineering, and the east wing for research into bio-climatology.

In addition to the basic $300,000 contribution by the Herrick Foundation and Tecumseh Products, some $150,000 in capital gifts were received from other industry sources—supplemented by a $155,000 construction grant from the National Institute of Health.

(The NEWS conducted an editorial campaign to help raise this additional money.)

Design Problems Solved Ingeniously

Problems of designing this research center were many and complex. Fundamentally there were four environmental conditions which had to be controlled: temperature, humidity, light intensity, and air movement.

Chambers in the east wing thereupon were made capable of sustaining temperatures ranging from -30° to 120° F.

Wall, floor, and ceiling temperatures of the two experimental chambers were designed to maintain constant temperatures.

Also, within each chamber, the floor temperature and the ambient temperature became independent of each other.

Thanks to these stringent criteria, it is now possible (in all the chambers) to find floor conditions at 100° F. and the ambient temperature at -30° F., or the floor at -30° F. and the ambient temperature at 100° F.

Problem of mainaining constant wall and ceiling temperatures was solved by surrounding each chamber with an annulus through which 10,000 cu. ft. of air circulates per minute.

Controlling humidity was particularly difficult for these Purdue people. Animals (especially swine, cattle, sheep) gave off large amounts of energy. Much of this animism is latent heat from evaporation (which raises the moisture content of any enclosure).

Equipment eventually was fabricated which disposes of most of this constantly-produced latent heat moisture — rapidly and efficiently.

As a special feature, the Purdue system limits air movement in these experimental "chambers" to any desired degree. (In addition, it screens out most of the airborne batceria which might enter.)

Fontaine to the Rescue Again

Wide range of operating conditions demanded for these experimental "cells" prodded Professor Fontaine and his colleagues to install three separate refrigeration circuits in their research "lab."

All three have two stages, with 50 hp. in each stage—for a grand total of 300 hp. of refrigeration capacity.

The old building which forms the nucleus of the Herrick Laboratory now consists of four separate sections: a bank of offices, two areas which contain partial climate control chambers (in addition to sections for feed and animal storage), and an environmental laboratory.

Every Purdue "climatology" student is provided with constantly available high pressure steam, low pressure steam, 200-volt single-phase and three-phase electric current, plus 110-volt electricity, for his experiments.

In addition, readily available water, gas, and compressed air are on tap. Thus, almost every square foot of floor area can be useful for research.

Upward Progress for Our Industry

Each graduate student who is working on a project in the Herrick Laboratory enjoys adequate instrumentation for his particular needs. And this is immensely important, because instrumentation is the key to valid reporting.

Recently Purdue researcher Richard Ulrich has solved significant problems of controlling mass flow rates of liquids through flexible orifices in the Herrick Lab.

Ulrich (an instructor in mechanical engineering) observed that—in a closed flow system—a small orifice will deform as liquid flows through it.

By an ingenious series of experiments, he has developed a mathematical equation which describes characteristics of such a system, and provides a means of predicting flow rates for various conditions.

After identifying the specific deformation (which varies in different materials) Ulrich believes he can control mass flow rates by a simple, economical—

"The new PPG Glasfloss Safety-Grille filters definitely improved the service of our air filtering system," states Mr. Arthur C. Kercher. "Their one-piece chipboard construction has eliminated blow-outs and cut replacement time by 40%."

"New PPG Glasfloss® Safety-Grille* filters eliminated blow-outs, reduced replacement time by 40%"

*TRADE-MARK

reports Mr. Arthur C. Kercher, Air Conditioning Engineer, Joseph Horne Co., Pittsburgh, Penna.

"The new PPG Glasfloss Safety-Grille filters greatly improved our air filtering operations at Joseph Horne Co.," states Mr. Kercher.

NO BLOW-OUTS

"With the older type metal grille filters previously used, we experienced frequent blow-outs. Air is drawn through the filter bank at a high velocity; but since switching to Glasfloss Safety-Grille filters, the blow-out problem has been eliminated.

SAFER, FASTER INSTALLATION

"The new chipboard grille of the Safety-Grille filters is superior to the metal grille filters we previously used. Workmen now install the filters 40% faster than before, because there is now no danger of being cut by sharp metal edges."

LONGER SERVICE, COST SAVINGS

"The sturdy one-piece construction of the frame and grille means that we cut costs through their long usage (12 to 16 weeks) and their ease of handling."

DO YOUR AIR FILTERS GIVE YOU THIS GOOD SERVICE?

The new Glasfloss Safety-Grille filters will improve your air filtering system. They are available in a complete range of sizes. Call your local Glasfloss Distributor or PPG Warehouse for top service.

A PRODUCT OF PITTSBURGH PLATE GLASS COMPANY

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh and St. Louis.

FIBER PG GLASS PITTSBURGH PLATE GLASS COMPANY

and almost foolproof system.

Another pregnant study going on currently in the Herrick Laboratory concerns the determination of heat transfer characteristics of extended surface heat exchangers.

It is extremely difficult to separate convective heat transfer from radiant heat transfer in practice, because the geometry of these parallel differentials is so complex.

Beginning with the premise that convective heat transfer is a function of air movement, this Herrick researcher has built a vacuum system in which he can isolate and measure heat transferred by radiation.

By subtracting radiant heat transfer, as measured by his vacuum system, he arrives at an accurate yardstick of convectivity for this type of heat exchanger—plus configuration factors associated with radiant heat.

Herrick Laboratory Futures

Among other research projects to be expected from the Herrick Laboratory (which Phil Redeker and "Dope" helped dedicate) the following "statements of intent" are prime:

(1) A study of viscosity as a physical property of refrigerants at extremely high and low temperatures in both the liquid and vapor phases.

(2) A study of mass transfer and heat transfer, in an attempt to discover the reasons for varying condensation rates of water on different surfaces under the same ambient conditions. Among the substances being studied are wood, aluminum, steel, and brass.

(3) Measurement of the proportions of various gases found in sealed refrigeration systems which result from the decomposition of the refrigerant present.

Purdue's Goals

Notwithstanding the promising progress at Purdue (in *applying* known principles of heat transfer and refrigeration), two types of information still are needed:

(1) More profound understanding of excess energy removal—as a basis for solving complex physical and engineering problems involved in air conditioning and refrigeration.

(2) More information about the effects of controlled climates on animal and human physiology.

To dissolve these dilemmas the Herrick Laboratory at Purdue university has a pair of prime immediate objectives.

First, it hopes to become a center for the collection, analysis, correlation, and dissemination of data on climate control and its effects on human beings and animals.

Second, it intends to provide unique facilities and opportunities for graduate study and research on the environmental physiology of temperature and humidity.

Among industries whose interests will be furthered both by the research carried on at the Herrick Laboratory, and by the trained scientists and engineers which it produces ,are:

The food processing industry, the air conditioning industry, the farm feed industry—plus the construction, materials, transportation, home building, instrumentation, and controls industries.

Roles played by the engineer and the physiologist at the Herrick Laboratory are satisfyingly complementary.

While one tells us how man can re-make the weather, the other reveals how weather influences men and animals.

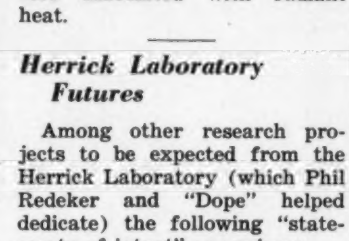
September, 1959, may turn out to be, historically speaking, a Lucky Month for our readers.

Memphis BBB Warns Citizens Against Letting Side-Line Mechanics Work on Refrigerant System

MEMPHIS, Tenn. — Memphis Better Business Bureau has warned citizens of Memphis to "Keep side-line mechanics away from refrigerant systems of your appliances to avoid possible serious damage leading to costly repairs."

"Many people are finding that untrained and poorly equipped workmen are causing refrigerant system breakdowns, and then they learn that the five-year warranty is void, because the workman was not from an authorized repair station," said George V. Morse, Jr., manager of the Memphis Better Business Bureau.

"This results in a costly repair bill, or the junking of an expensive appliance," Morse declared. "Authorized services are listed in the yellow pages of the telephone directory," he pointed out.



Mounts Mineralloc hangers No. 0 to No. 6 on I-Beams without necessity of drilling holes. Have ¼-20 tapped holes. Fits beam flanges up to ½" thick. Low cost. Send for literature.

MINERALLAC ELECTRIC COMPANY
25 N. PEORIA ST. • CHICAGO 7, ILL.

DAVISON

PA-400

Silica Gel

stops corrosion and freeze-up in seconds

Davison PA-400 in refrigerant gases drops moisture level to less than 10 ppm—effectively prevents water from combining with refrigerant to cause hydrochloric and hydrofluoric acid formation. In fact, if acids have already formed, Davison PA-400 will remove them, too.

Scale, sludge and other foreign matter as small as 1 micron in size are removed by Davison PA-400 full-flow, no by-pass filtration. Combine top dehydration with the finest filtering efficiency—that's Davison PA-400. Write Dept. 2519 for full information.

W.R. GRACE & CO.
DAVISON CHEMICAL DIVISION
BALTIMORE 3, MARYLAND

Central Packaged Unit Chosen

Drive-In Restaurant Cools 14 Cars; Ducts Run Underground To 8 In. Pipes Between Cars; Flexible Ducts Fit Into Cars

By W. B. Owen, Air Conditioning Div., Westinghouse Electric Corp., Staunton, Va.

The first centrally air conditioned drive-in restaurant in the Carolinas, and possibly the first in the Southeast, has recently been installed in Fayetteville, N. C.

The drive-in business is both very lucrative and very competitive in Fayetteville. Therefore, Pete French, retail salesman for Glenn Newberry Co., the local Westinghouse dealer, decided to see if he couldn't get some air conditioning business from the drive-in restaurants.

French contacted Bob Kleha, Fayetteville entrepreneur and owner of Bob's Drive-In on Fort Bragg Rd., with the idea of selling a central air conditioning system for the parked cars as a means of increasing business.

Kleha was receptive to the idea from the standpoint of increasing the business at the drive-in on hot summer afternoons. Therefore, it was decided to go ahead with air conditioning of 14 auto spaces which formed a "U" at the rear of the drive-in with the kitchen area located in the opening of the "U."

3 Air Conditioning Methods Considered

Three methods of doing the job were considered: (1) Seven small, packaged air cooled units ("attic" type units) to be suspended overhead with one unit serving two cars by short flexible ducts.

(2) One central package unit with overhead duct being run to the cars and flexible ducts taking off to each car.

(3) Same as (2) but with ducts running underground.

System (3) was selected since it would obviously give the best service with least inconvenience and proved to be cheaper than system (2) and only 15 to 20% more than system (1) which would be somewhat makeshift.

Design data on auto air conditioning is nearly non-existent so the Glenn Newberry Co. called on Westinghouse service and sales engineers to design the system.

It was decided to circulate 460 c.f.m. per car and provide 1.3 tons of cooling per car. In order to accomplish this with the use of 100% outside air at design conditions 95° F. dry bulb and 78° F. wet bulb, it was necessary to use a standard 30-ton Westinghouse water cooled package unit, model MU-313.

The air flow of the unit was reduced from 12,000 c.f.m. to 6,440 c.f.m. The unit was placed on the grass at the rear of the drive-in area 60 ft. beyond the cars to be cooled.

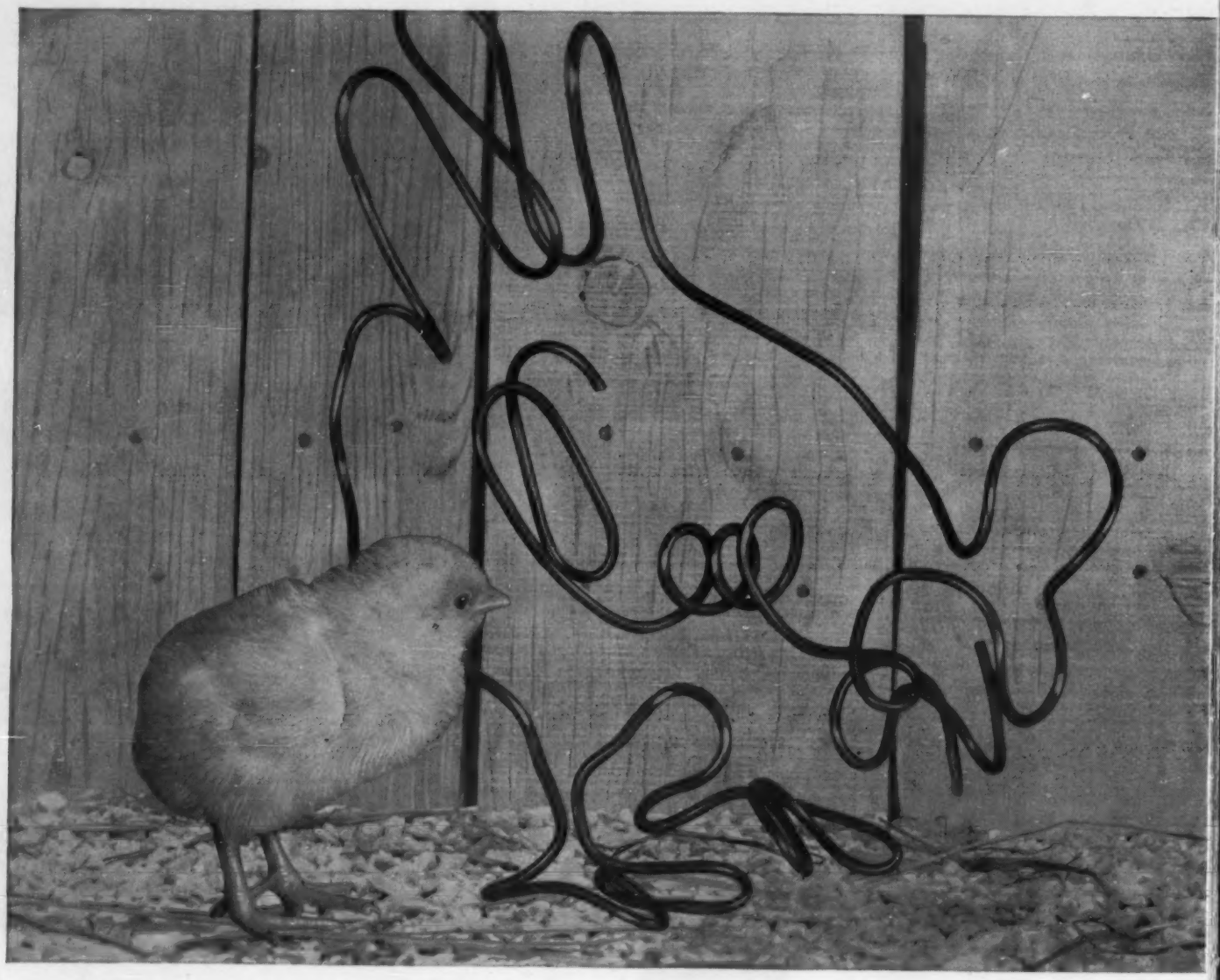
The underground ductwork was designed to use terra-cotta round pipe which would be waterproof and would not decay. The 30-ton unit was set up with a side-mounted fan section so

CARHOP places flexible tubing with grille on end into auto of restaurant customer. Fastened in window the grille directs air against ceiling of car from which it is spread over passengers.

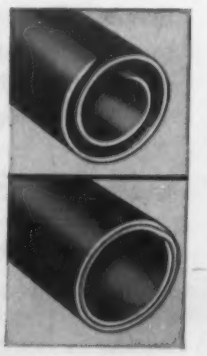
A COMPLETE LOOK AT THE HEAT PUMP

USER DISTRIBUTOR MANUFACTURER UTILITY

Coming in the Sept. 21 Heat Pump Issue



There's almost no limit to the things Bundy can mass-fabricate



Bundyweld is the original tubing double-walled from a single copper-plated *steel* strip, metallurgically bonded through 360° of wall contact for amazing strength, versatility.

Bundyweld is lightweight, uniformly smooth, easily fabricated. It's remarkably resistant to vibration fatigue; has unusually high bursting strength. Sizes up to ½" O.D.

The old adage, "Don't count your chickens before they hatch," is a good one . . . but it rarely applies to Bundy. That's because, no matter how complex your tubing problem, you *can* count on Bundy for the perfect solution.

Bundy engineers and designers are backed by years of experience in the mass-fabrication of steel tubing. And they are available to you at any stage of product development for time- and money-saving suggestions. Their key: Bundyweld®!

Bundyweld steel tubing is double-walled, copper-brazed, leak-proof by test, and the safety standard of the refrigeration industry. Beveled edges provide smooth inside and outside seams. No inside flash to be removed.

So, when you want to talk tubing, talk to the leader—Bundy! Phone, write, or wire Bundy Tubing Company, Detroit 14, Michigan.

that air could blow straight down into a large, underground sheet metal plenum.

Two lines of 18-in.. diameter terra-cotta duct take off horizontally underground toward the parking area. Each of the two 18-in. lines takes care of one side and half the bottom of the "U" shaped area where the cool cars park, and the duct lines run directly under the cars.

The ductwork was designed with negligible pressure drop in the underground duct and a drop of about .5 in. water in the flexible hoses and grilles.

Seven 8-in. round metal pipes take off vertically from the top of the terra-cotta pipe with each metal pipe being located between two cars.

The metal posts extend 4 ft. above the ground; each post is topped by a small metal plenum box which has two 6-in. diameter flexible ducts attached to it. The box contains a balancing damper for each flexible duct. These ducts are 4½ ft. long and extend to the window of the car to be cooled.

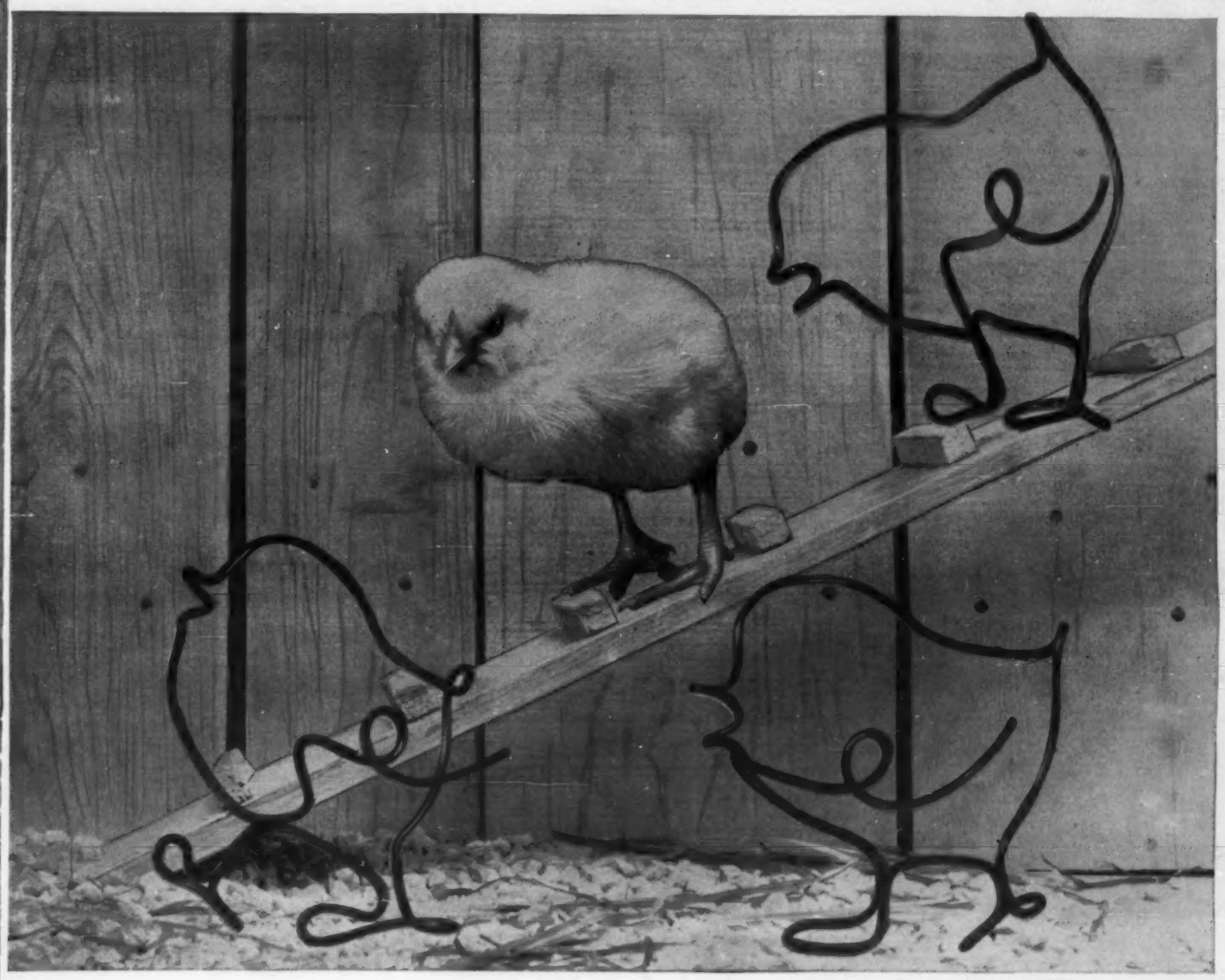
Distribution is by means of a long narrow sponge plastic grille at the end of the flexible pipe. This grille fits into the window and when the window is rolled up on it, it stays in place and directs air toward the ceiling of the car from where it is spread over the car's occupants.

The unit is enclosed within a decorative walled area with flat roof which was designed for the purpose. Air intake is through the wall which has a decorative pattern involving many holes which allow the air to pass to the unit. The 30-ton natural draft redwood tower sits behind the unit and sticks up above the flat roof.

The unit is controlled by five remote manual switches located outside near the serving area. One switch brings on the fan, the second switch brings on the pump and the first of four compressors contained in the 30-ton unit, and each of the other three switches brings on another compressor. The number of compressors to be turned on is strictly a function of how hot it is. The air flows through all 14 grilles regardless of the number of cars parked.

There is provision in the duct system to add six more spaces if the unit proves to have excess capacity.

This air conditioning system has proved to have immense promotional value and any hot afternoon Bob's Drive-In does a brisk business.



Spokane, Wash. Office Buildings Wire for Air Conditioning

SPOKANE, Wash.—"Here is real evidence on a large scale of recognition of the demand for air conditioning in our area.

"More and more, property owners and managers will be faced with pressures from their tenants for air conditioning. However, it is up to the dealer to pitch in and really sell them now."

This was pointed out in a recent issue of *Dealer News*, published by Washington Water Power Co., in a report run under the headline "Downtown Spokane Office Buildings Wire for Comfort."

The article noted that Power City Electric has completed the job of running electrical service to every floor of the Empire State building to accommodate the anticipated air conditioning load. Separate 42-circuit panels were installed on each of the six floors providing either 120 or 208-volt service to every office in the building.

It was also reported that the Hyde building was undergoing complete and extensive wiring from basement up by Maxwells, Inc. Included in this job is a new 1,600 amp. circuit breaker switchboard in the basement, new feeders throughout the building, installation of a 42-circuit panel on each floor, and complete rewiring of all offices with the addition of a special 20-amp. outlet in each office for the installation of air conditioners.

Hotel John Marshall To Cool 100 More Rooms

RICHMOND, Va.—According to Manager Walter Herrmann, air conditioning will be installed in 100 more rooms of Hotel John Marshall at a cost of more than $120,000.

The hotel already has approximately 300 of its 504 rooms air conditioned. The Philadelphia engineering firm of Charles S. Leopold is in charge of the new project.

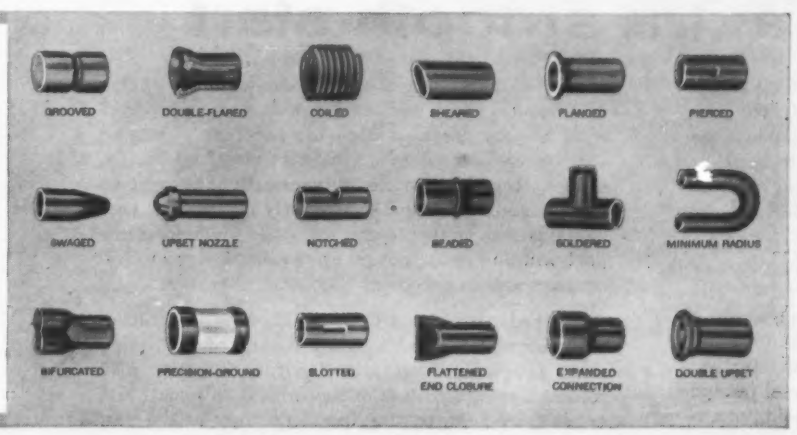
The John Marshall is one of five hotels owned by Richmond Hotels, Inc. The others here, the King Carter, the Richmond, and the William Byrd, are about 50% air conditioned.

Central Air Conditioning To Handle 100 Units In Commodore Perry Hotel

TOLEDO—Central air conditioning is being installed in the Commodore Perry hotel to service 100 rooms and suites, Henry B. Williams, vice president and general manager of the Commodore Perry Co., said. Completion is set for Sept. 1.

The new installation is a continuation of a program started in the spring of 1957 when more than half of the sleeping rooms in the 500-room hotel were air conditioned, Williams said. All meeting rooms and restaurants previously had been air conditioned.

No matter what type of mass-fabrication you require, Bundyweld may be your answer. Shown here are just a few tubing operations designed and fabricated by Bundy—many for use in the refrigeration industry.



There's no substitute for the original

BUNDYWELD® TUBING

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, AND ITALY

BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

New ARI Post Goes To Warren L. Bouve

WASHINGTON, D. C. — Appointment of Warren L. Bouve to the newly-created position of secretary, ARI product sections, was announced by Geo. S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute.

Bouve will be responsible for arranging meetings of, preparing agenda for, meeting with, and preparing minutes of meetings of ARI's 14 product-sections, working directly with the managing director.

The new post was created following the resignation of Miss Mary Jane Stewart, assistant director of ARI, on Aug. 31. While ARI's board of directors voted not to name another assistant director, Bouve and other members of the existing staff at the institute will assume many of the duties for which Miss Stewart has been responsible in the functioning of the association.

The new staff member has had experience in trade association work in Washington, particularly in the planning and handling arrangements for meetings such as those he will be called upon to work with in his new position. For the past seven years he has served as committee executive for the National Security Industrial Association, a non-profit group dedicated to developing understanding and close working relations between defense industries and the Department of Defense, according to the announcement.

Wm. H. Motz Dies

CHICAGO—William H. Motz, 66, of Elmwood Park, supervising engineer for Jefferson Ice Co., died recently in West Suburban hospital. A former engineering instructor at the University of Wisconsin, he authored a textbook on refrigeration engineering.

RRF Honors Diehl

COLORADO SPRINGS, Colo. —The board of governors of The Refrigeration Research Foundation announced the election of Dr. H. C. Diehl to honorary life membership in the foundation.

Awarding of the honorary membership certificate will be made at an Executive Committee meeting dinner on Oct. 24 in the La Salle Hotel, Chicago.

Dr. Diehl retired last Dec. 31 after serving as the foundation's only director since it was formed Jan. 1, 1944. One other honorary membership is held by Prof. Dr. Rudolf Plank, Karlsruhe, Germany.

In Air Conditioners, Texas Still Biggest

NEW YORK CITY—A report issued by the National Electrical Manufacturers Association on distributors' sales of room air conditioners—expressed percentagewise — to dealers, by states, indicates that in the first six months of this year, Texas barely edged out New York, 10.997% to 10.260%.

NEMA is not yet making public actual unit volume of room air conditioner sales. The report is based on distributors' sales to dealers reported to the NEMA Statistical Dept.

Florida took third place, with a percentage of 6.674, followed closely by Pennsylvania with 6.606%. Illinois (5.806%) came in fifth.

The full summary for the first half of 1959 follows:

DISTRIBUTORS' SALES TO DEALERS, BY STATES*

States	Per Cent
Alabama	2.747
Alaska	.000
Arizona	.527
Arkansas	1.227
California	5.224
Colorado	.333
Connecticut	.941
Delaware	.364
District of Columbia	2.065
Florida	6.674
Georgia	2.709
Hawaii	.060
Idaho	.074
Illinois	5.806
Indiana	1.447
Iowa	1.206
Kansas	2.291
Kentucky	1.105
Louisiana	3.499
Maine	.029
Maryland	1.549
Massachusetts	1.640
Michigan	1.036
Minnesota	.724
Mississippi	1.373
Missouri	4.374
Montana	0.54
Nebraska	1.305
Nevada	.105
New Hampshire	.060
New Jersey	5.127
New Mexico	.087
New York	10.260
North Carolina	2.366
North Dakota	.071
Ohio	2.617
Oklahoma	2.391
Oregon	.206
Pennsylvania	6.606
Rhode Island	.169
South Carolina	1.234
South Dakota	.261
Tennessee	3.501
Texas	10.997
Utah	.167
Vermont	.022
Virginia	1.918
Washington	.288
West Virginia	.493
Wisconsin	.638
Wyoming	.029
Total United States	**100.000**

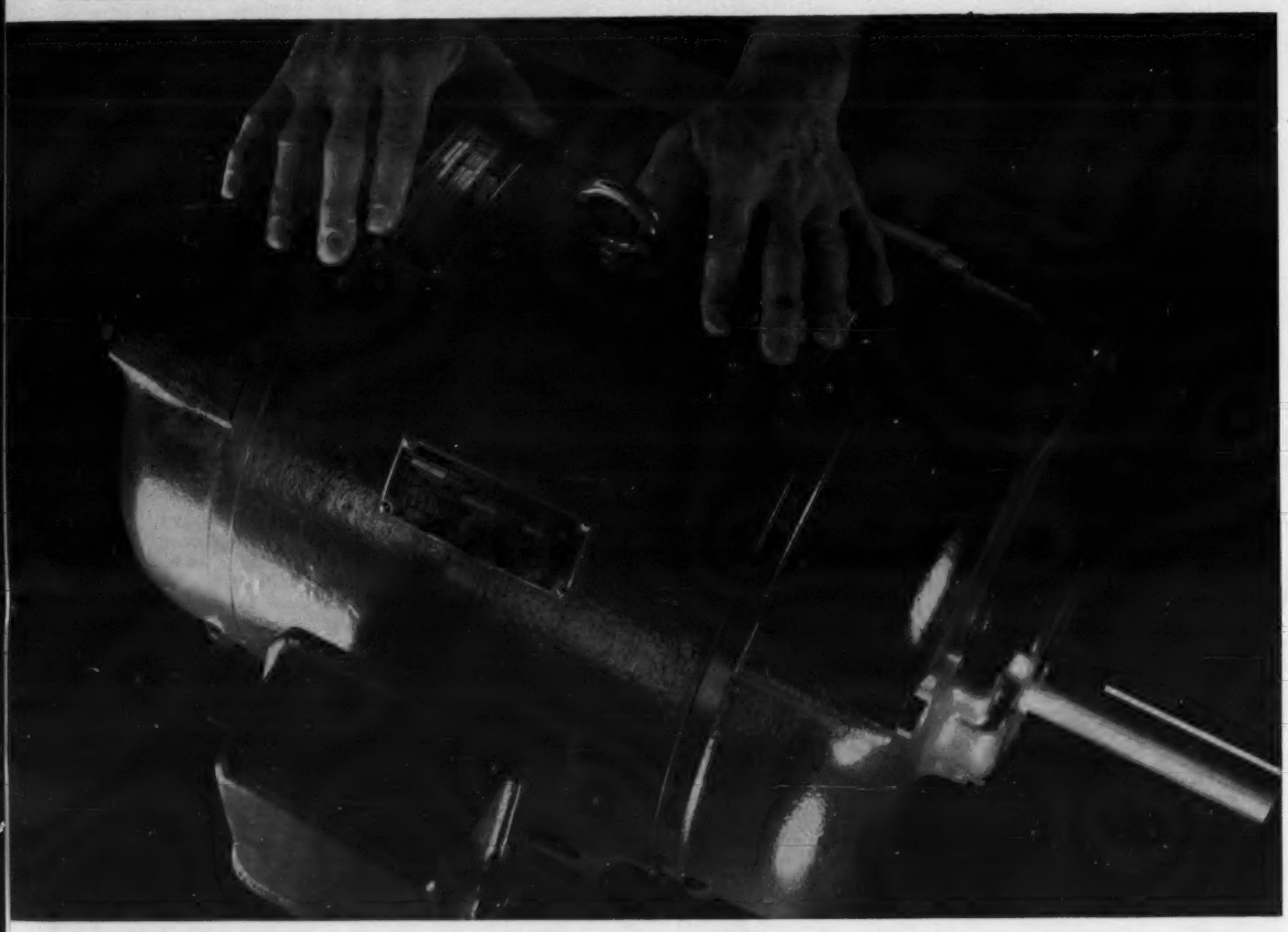
*Based on Distributors' Sales to Dealers reported to the NEMA Statistical Department.

4-Alarm Fire Hits Sanders Refrigeration

DETROIT—a four-alarm fire recently in a two-story brick building occupied by Sanders Refrigerator Co. and two other firms caused damage estimated at more than $125,000.

The Sanders concern makes commercial refrigeration equipment. The company and the building are owned by Ernest F. Sanders and his son, Gar E. The latter said the building was covered by insurance.

The fire, which blazed for nearly three hours before being brought under control, destroyed portions of the second floor and the roof. Cause of the fire was not immediately determined.



New Century Electric motor provides low-cost power for fans, blowers, pumps and compressors.

New Century Electric part-winding motor gives extra smooth start

This new motor . . . at either 1200 or 1800 rpm's . . . will give smooth, cushion acceleration. No cogging, jerking or jarring equipment. Just dependable starting power with the same reduction in starting current of all Century Electric part-winding motors. A special winding scheme makes this extra smooth start possible.

Applications—Have an application where power company restrictions limit inrush current? The complete line of Century Electric part-winding start motors may be the answer. They provide the most economical and dependable way of starting equipment such as fans, blowers, centrifugal pumps and compressors, as well as reciprocating compressors with unloading valves.

Reliable power—High quality construction features include . . . coils insulated with tough polyvinyl acetal resin . . . windings dipped and baked with several coats of high temperature synthetic varnish which protect against oil fumes, mild acids, dust and grit . . . rotors dynamically balanced so motors run smoothly and quietly . . . rugged cast iron frame for long life and low noise level. Century part-winding start motors are available in 20 to 150 hp sizes and in speeds of 1200 and 1800 rpm.

Application aid—A Century Electric application engineer will be glad to discuss your part-winding start problems with you. Century Electric also makes a complete line of motors . . . all sizes and types from 1/20 to 400 hp. For a copy of the new Century Electric Motor Application Guide, please write for bulletin 270A. For *more* than a motor . . .

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri *Offices and Stock Points in Principal Cities*

Century 59-13

How Honeywell Air Conditioning control panels can offer greater reliability and performance at less cost

You get the advantage of one-company responsibility for all these features

- Most complete line in the industry—with matched components engineered to the highest quality standards.
- Special panels may be designed to meet the special needs of any air conditioning manufacturer.
- The most economical and trouble-free way of meeting your heating and air conditioning control panel needs—Honeywell standardization.
- One factory completely devoted to the manufacture of control panels.
- Forty years of specialized engineering experience in control panels.
- One hundred twelve field service offices throughout the country to give application, installation and repair assistance to you and your dealers.

You have more to sell when you sell HONEYWELL

Only **Honeywell** has an entire factory

Honeywell's residential air conditioning control panels are made in one factory which makes nothing but control panels. The entire plant of 72,500 square feet—the entire staff of 175 people are devoted to making the best panels at the lowest possible cost.

And *you* benefit by this specialization. You benefit from Honeywell's years of experience in the design, development and manufacture of all types of air conditioning control panels. You get dependability and time-tested quality.

You get dealer acceptance, too, when your units are equipped with Honeywell RAC panels. Hundreds of thousands of Honeywell air conditioning panels are in operation throughout the country. Dealers understand them, like them, know they are dependable.

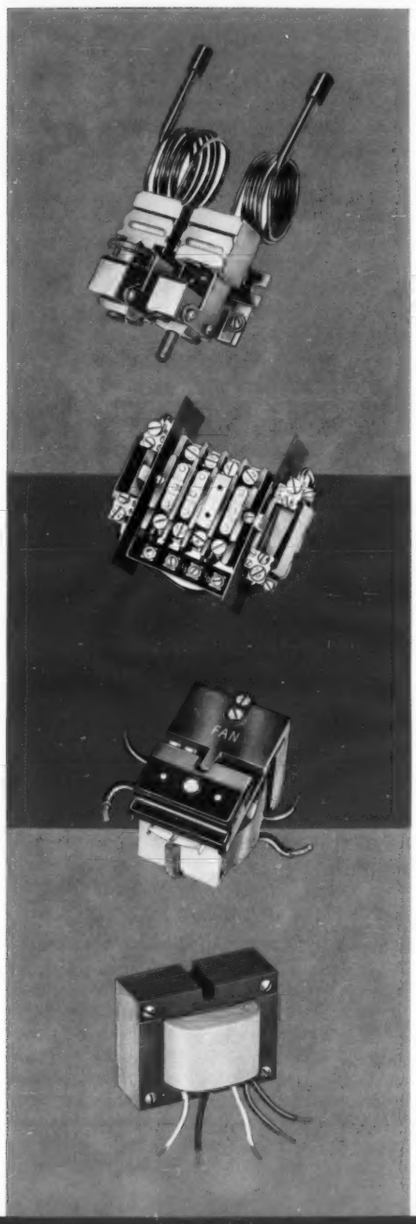
You get economy because of Honeywell standardization. The same transformers, terminal strips, cases, subpanels, contactors, relays, and other components are used for hundreds of panel models. This production in volume brings real savings to you.

And Honeywell backs every component in every panel—backs it with the largest service organization in the industry. 112 Honeywell sales and service offices throughout the country are always ready to give application, installation or repair assistance to you and your dealers.

that makes only control panels

Every component is designed and made with Honeywell quality

. . . matched to work perfectly with every other panel component



Pressure controls. Honeywell's Pressuretrol* line is compact, functionally designed to meet every air conditioning and refrigeration application. Terminals, reset buttons and differential knob are together, need access from only one side. Switch mechanism is simple, direct acting. No tweezer parts, pivots, or levers. Knurled differential adjustment knob can be operated by hand. Needs no tools. Pressure controls are designed to work perfectly with all other Honeywell panel components. All pressure control models can also be purchased separately.

Contactors and Motor Starters. Designed especially for residential air conditioning, these new type contactors and starters provide maximum compactness and flexibility. Economical in cost, yet product quality has been rigidly maintained. Available in 2-pole, 24 amp. and 2-pole, 3-pole and 4-pole models in 30 or 40 amp. capacities, single or 3-phase. Newly designed bracket type terminal junctions afford neater, simpler wiring within a minimum space. Positive action on make and break regardless of under or over voltage conditions.

Relays. For more than 70 years, Honeywell has been known throughout the industry for its dependable, long-lasting control relays. Hundreds of millions of Honeywell relays are in use throughout the world—in a wide variety of electric and electronic control applications. The Honeywell relay department is world famous among production engineers as the originator of the continuous check method of quality control—which makes possible high output plus careful inspection through each stage of manufacture. This insures top quality for the relays and for Honeywell Control Panels.

Transformers. Internally fused, U.L. listed full 40 V.A., 115 or combination 208-230 volt primaries. High volume automation techniques combined with flexible production practices and close control of each operation have made possible the development of a wide range of Honeywell transformers. Each is suited to specific control applications—each maintains consistently high quality, lasting dependability. For example, Honeywell engineers developed a special lamination assembly machine that uses both the "E's" and the "I's" stamped for transformer laminations. Instead of scrapping the "I's" (which has been general practice in the industry) these "I's," along with the "E's" are incorporated into the core of the transformer. Result: Reduced core wattage, cooler operation, longer transformer life under maximum load conditions.

*Trademark

Choose the RAC* control panel to meet your exact needs

**Residential Air Conditioning*

Standard Models

The five RAC panels shown at right are standardized models that will handle the majority of RAC requirements. The pressure controls may be added to these panels where required. You benefit many ways by choosing one of these standard Honeywell panels:

- Standard panels are stocked in all major Honeywell Sales Offices. This means quick replacement parts for you and your dealers.
- You pay no price premium for a small lot order.
- Standard RAC panels are better understood by your dealers. Result, greater dealer acceptance, and faster, more economical installation and service.

Special Models

In addition to the five standard panels at right, Honeywell also offers many special panels to meet special RAC requirements, such as heat pump applications, two-stage cooling applications, etc.

If one of these many special panels will not satisfy your RAC needs we will be happy to work with you to custom-engineer a panel to match your exact requirements.

For further information call your nearest Honeywell Office, or write Honeywell, Dept. AN-3-59, Minneapolis 8, Minnesota.

You have more to sell when you sell Honeywell

Honeywell

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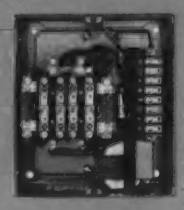
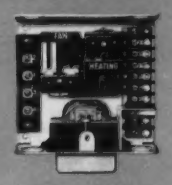
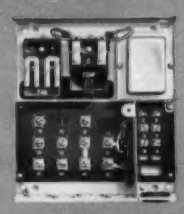


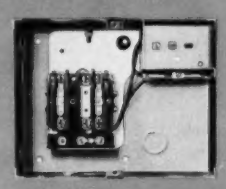
WA212AQ—Self-contained panel with 3-pole 30 amp. contactor, 2-speed fan relay, 40 VA transformer, and provision for mounting pressure control.



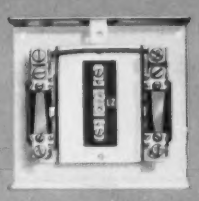
WZ26D—Evaporator sequencing panel with 2-speed fan relay, heating or cooling relay, and 40 VA transformer.



W428A7—Self-contained panel with 2-pole 16 amp. contactor, 2-speed fan relay, and 40 VA transformer.



W431DN—Condensing section panel with 3-pole 30 amp. contactor and provision for mounting pressure control.



W450B1—Overload relay panel with two manual reset overload switches in box and cover; order heaters separately.

P432—Dual pressure control, bracket mounted.

P433—Dual pressure control with box and cover.

Former Repair Station Finds It Rough As Sutton Drops Conditioning Business

HIALEAH, Fla.—An almost immediate 50% drop in business was felt by Gables Cooling & Heating, Inc., when O. A. Sutton Corp. dropped its air conditioning business recently, states Frank Trevett, president.

"In addition, I have been threatened with an assortment of lawsuits from such sources as one of the banks handling the Sutton affair and individual customers who own equipment still in warranty," Trevett points out.

A former repair station for Sutton and Sutton's brand name accounts, the Hialeah company holds several thousand dollars worth of parts for which the bank, one of Sutton's creditors, is trying to collect. "But they owe me more than twice what I owe them," insists Trevett.

Trevett's company has bounced back strong—but not all the way. Of the brand name accounts, one has continued to work with him; a second is considering a move in the same direction.

In addition, Trevett has expanded his setup for conversion of air conditioning units to heat pumps, and he is aggressively promoting his outside service work.

"The last word from Sutton," he recalls, "was a mimeographed form letter which said, in effect, that they were formulating a new service policy—which never developed.

"Before that, the only warning we had was a vaguely worded telegram implying something was amiss."

Right off, it became impossible for Trevett to recover compressors he had previously sent to compressor repair stations "because Sutton owed them money and they wanted me to pay for the compressors."

With the parts still on hand, Trevett is serving Sutton equipment but charging for service and parts. On in-warranty replacement of compressors, he is not marking up the price of the transaction—charging the customer just about what it costs him.

Texas SAE Auto Air Conditioning Forum Scheduled for Dallas Sept. 24-25

DALLAS—The Texas Section of the Society of Automotive Engineers will hold its sixth annual auto air conditioning forum on Thursday and Friday, Sept. 24-25, at the Sheraton Dallas hotel here.

The program for Thursday calls for setting up of displays in the Austin and Houston rooms and registration from 8 a.m. to noon, a luncheon, a meeting from 2 to 3:30 p.m., coffee and soft drink break from 3:30 to 4, meeting from 4 to 5:30, and dude ranch "Bar-B-Q" and entertainment in the evening.

On Friday, there will be meetings in the morning and afternoon, a luncheon, a cocktail party from 6 to 7 p.m., and then a dinner and talks, according to the announcement.

Exhibitors will be limited to trade suppliers and will not include auto air conditioner manufacturers. The latter, upon payment of a sponsor's fee, will be entitled to listing on various forum programs and cards as sponsors.

Carrier Announces Shifts In Locale For Some Operations

SYRACUSE, N. Y. — Carrier Corp. announced that production operations of its Bryant Mfg. Co. division in Tyler, Texas, are being moved to Indianapolis and that Carrier's food freezer operation will be transferred from Syracuse to Tyler before the end of the year.

Bryant has been using the Tyler plant for the manufacture of small air conditioning and heating units and water heaters. This production is being shifted to Indianapolis as part of a program to consolidate Bryant operations in that city, it was explained.

In announcing the move, Carrier President William Bynum said the size, lay-out, and location of the Tyler plant are ideal for the production of Carrier food freezers. The national headquarters of Rich Plan Corp., largest private brand customer for Carrier freezers, is located in Dallas. Rich Plan is one of the leading frozen food plans with nationwide distribution through more than 90 franchised dealer-members, it was stated.

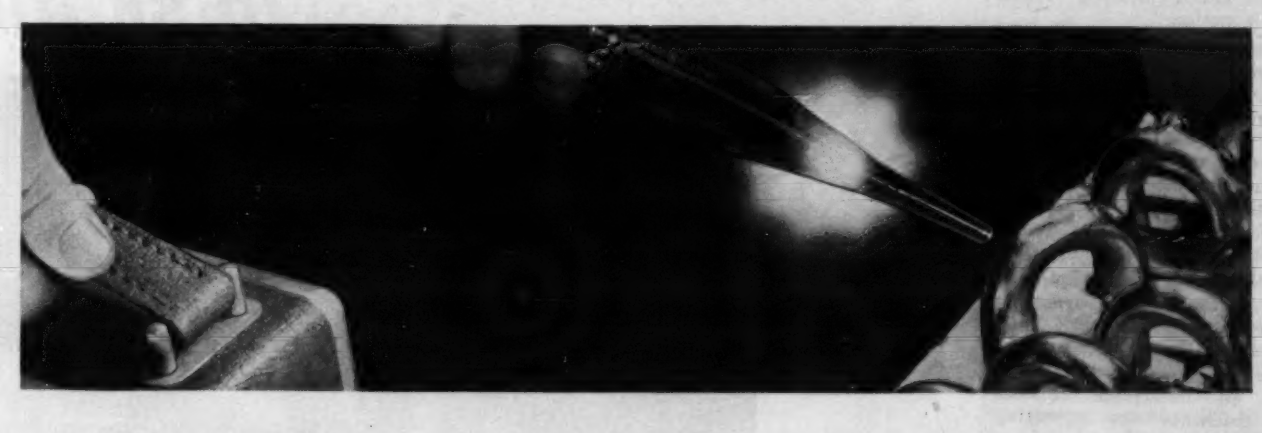
The freezer operation will continue to be a part of the Allied Products Div. of Carrier under the general management of Vice President Loren Fletcher. A small number of supervisory personnel will transfer from Syracuse to Tyler.

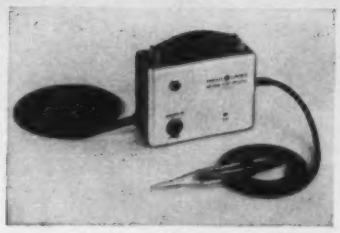
Valley Equipment Plans Open House Sept. 24-25

SOUTH BEND, Ind.—Valley Equipment Co., Inc., refrigeration and heating wholesaler, will hold open house Thursday and Friday, Sept. 24 and 25, in its new and larger quarters at 422-424 E. Monroe St. here.

Many of the firm's manufacturing suppliers will be on hand to greet dealers and help with displays, it was noted. The company was formerly located in Mishawaka, Ind.

locates leaks in a flash . . .





This new General Electric Type H-6 leak detector flashes a probe light instantly when the tip pinpoints a leak. Air conditioning and refrigeration leaks (even as small as ½ ounce per year) are detected quickly and positively in a flash! ***Eliminates costly guess work.*** As soon as the tip of the probe finds a broken seam or leaky joint, there's a reliable signal right in your hand! The H-6 has an automatic balance circuit . . . you can locate leaks even when the atmosphere is contaminated with refrigerants up to 100 ppm. Flip the switch and start probing in only 60 seconds. This sensitive unit ***responds to leaks quickly,*** recovers in a second. It's compact, lightweight, rugged, portable . . . and attractively designed. Always enjoy fast, positive, sensitive detection—at low cost—with the Type H-6. Or, for other special applications, select from General Electric's complete line of portable and stationary halogen units for pressure or vacuum leak testing. Get the full story today! Just contact your local air conditioning and refrigeration wholesaler, or write direct to Sect. 595-203, General Electric Co., Schenectady 5, N. Y.

Other General Electric Instruments for Industry—*Hook-on volt-ammeters, electric recorders and controllers, pyrometers, timing devices, speed and color measurement equipment, laboratory test instruments.*

INSTRUMENT DEPARTMENT

GENERAL ELECTRIC

Photographic Control Feature Pinpoints Trouble In Heating or Cooling Systems

ROCHESTER, N. Y. — Trouble in air conditioning or heating systems at an Eastman Kodak office building can be pinpointed easily now, thanks to a new photographic control feature, the company reported.

It consists of a ground glass projection screen built into the center of a master control panel. The panel regulates air conditioning, heating, and water temperature for an entire newly-remodeled office building.

"Whenever an operator activates one of a number of large fans or pumps at remote locations, a color photo-diagram of the particular system is projected automatically on the screen," it was explained. "This immediate reference is an important aid in locating trouble or malfunction."

Elmer Andrews, manager of building services at Kodak Office, said the master panel controls temperatures of six different kinds of water for drinking, washing, and photographic operations. The panel also shows at a glance the status of cafeteria refrigeration and of cold storage rooms for film.

Besides the eye of photography, the panel provides a double-check by ear. An operator can switch on a microphone in each of the fan rooms and listen to determine if the huge machines are operating smoothly.

KODAK office maintenance operator uses an intercommunication system to check air conditioning fan operation. The sound of each fan over the intercom system tells if it is operating smoothly. The air conditioning system he is regulating appears on the projection screen at upper left.

Airserco Names H. G. Saunders

PITTSBURGH — E. C. Williams, president of Airserco Mfg. Co., announced the appointment of Harold G. Saunders as vice president in charge of sales.

H. G. Saunders

Saunders will specialize in instrumentation, high vacuum pumps and systems.

Saunders was formerly with the Kinney Mfg. Div. of New York Air Brake Co. where for several years he was sales manager. He is well known in the refrigeration industry as a speaker on high vacuum pumps and equipment with special emphasis at the service level, it was noted.

Winn To Manage Gibson Room Conditioner Sales

GREENVILLE, Mich. — William H. Winn has joined Gibson Refrigerator Co., Div. of Hupp Corp., as national sales manager of room air conditioners, it was announced by W. C. Conley, vice president in charge of Gibson sales.

Winn will report to J. F. Klintworth, manager of room air conditioner sales; and in turn C. D. Seltzer, field sales manager of room air conditioners, will report to Winn.

Before joining Gibson, Winn was with Frigidaire for 13 years where his last post was sales supervisor of air conditioning and heating.

Winn will be spending most of his time in the field assisting Gibson distributors and dealers with promotion and sales of air conditioners and dehumidifiers.

Some Producers Up Copper Prices

NEW YORK CITY — Their price for refined copper was raised recently by 1½ cents a pound to 31½ cents by some copper producers operating facilities which had not been shut down by strikes.

The increases were announced by Copper Range Co. and its wholly-owned subsidiary, White Pine Copper Co., and Anaconda Co. The boost will also affect copper sold by Anaconda for the account of Inspiration Consolidated Copper Co.

The only major custom smelter of copper still operating as of a recent date, American Metal Climax, Ltd., earlier raised its price from 30 cents a pound to 33 cents.

Major copper producers, including Kennecott Copper Corp. and Phelps Dodge Corp., have indicated they would not change their quotation for copper produced at struck facilities while the strike lasts. Prior to the shutdown of mines and processing plants, the price of copper was 30 cents a pound.

Famco Workers End 2-Week Walkout

LOUISVILLE, Ky. — The Strawberry Lane plant of Famco, Inc., was expected to be back in full production by last week after striking employes voted to return to work, ending a two-week walkout. The plant, which makes glass-fiber products, employs about 450 workers.

In skating rinks...

Hockey—"the fastest game in the world"—is rapidly becoming America's number one winter spectator sport. For years, players from Canada—where the temperatures favor hockey all winter long—have dominated the National Hockey League. Recently, however, an increasing number of American schools and colleges have installed artificial ice rinks on the campus. As a result, we may soon see more hockey players from the U.S. making the pro teams.

McQuay Operating Income For Half Hits $732,674

MINNEAPOLIS — Operating income of McQuay, Inc. for the first six months of 1959 was $732,674, compared with $548,668 in the corresponding period of 1958, according to a statement sent to shareholders by B. E. James, president.

Net income after taxes amounted to $328,877 for the first half of 1959, as against $261,899 in the same period in 1958. This amounted to 89 cents a share earned on the common stock, and compares with 90 cents a share for 1958, but was on the basis of 364,724 shares against 284,197 in 1958.

"Actual profits of our company from operations in the first six months were 25½% greater this year, but were distributed over a greater number of shares," James pointed out.

"Orders booked and completed sales in the second quarter of this year continued the strong trend indicated in the first quarter. As a result our shipments for the first six months of the year exceeded those of last year by 12½%, and the backlog at the end of the first six months of 1959 was the highest for this date in the history of the company."

HACRD Names 2

RALEIGH, N. C. — Appointment of Vernon Schrum as field man and analyst and William Adams to head office production for Heating and Air Conditioning Research and Development Association here has been announced by Dr. E. A. Fails, executive secretary.

Ranco Consolidated Net Sales for Quarter Reported at $10,405,816

COLUMBUS, Ohio — Consolidated net sales of Ranco, Inc. in the quarter ended June 30 amounted to $10,405,816 as compared with $8,061,192 in the same quarter of the prior year —an increase of 29%, the company announced.

Consolidated net earnings were $939,872 or 86 cents a share, which compares with $560,890 or 51 cents a share in the June quarter of 1958.

Consolidated sales for the year to date were $29,141,234 compared with $24,546,110 a year ago. The profits after taxes for this period were $2,518,494 or $2.30 a share which compares with $1,518,957 or $1.36 a share in 1958.

"The results of operations in the last quarter of the year are uncertain as a result of the steel strike," it was noted. "However, management has exerted every effort to protect earnings by forward purchases.

"A Swiss corporation, Ranco AG, Zug, has been formed and a German operating company, Deutsche Ranco GmbH, is being formed to meet the increasing demand for our products in Europe. This demand has required further expansion of our manufacturing facilities in Scotland and the acquisition of an additional plant in Italy.

"The growth of operations in Europe has made it necessary to establish a central administrative and sales headquarters in London."

Coolerator Has Biggest July, August

ALBION, Mich.—M. F. Beisber, president of Coolerator Div., McGraw-Edison Co., announced recently:

"We have just experienced the biggest July and August sales ever recorded by the Coolerator Div.

"Shipments of room air conditioners were 222% ahead of the same period a year ago, and total value of all products shipped during July and August established a new record for the division.

"While the hot weather obviously established a good weather market for air conditioners," Beisber said, "we think that our advanced planning, extended late season production, and strategically located field stocks paid off.

"We are sold out in some models in our line, but are generally in a good position to take care of additional late season demand for most of the 22 models in our line," he pointed out.

To meet the anticipated market demand for 1960, major additions to plant and equipment are under way. With the purchase of a large press and other metal fabricating equipment from the O. A. Sutton Corp., the Coolerator Div. will have substantially increased manufacturing capacity for the 1960 model year, it was stated.

PHCIB Graduates To Get Certificates At Dinner Meeting

CHICAGO—A dinner meeting and presentation of certificates of graduation to the Dubuque, Iowa contractors who have been students in the Plumbing - Heating - Cooling Information Bureau's initial sales training course will mark the successful completion of this pilot program the evening of Sept. 16.

G. Allen Briggs, second vice president of the National Association of Plumbing Contractors, will award the contractors their certificates. Howard L. Spindler, president of the PHCIB, will also commend the contractors.

The dinner will take place at the Dubuque Golf and Country Club starting at 6:15 p.m.

Russians See Model of Air Cooled Apt. Bldg.

LA CROSSE, Wis.—The thousands of Moscovites who viewed the U.S. National Exhibition in Moscow saw a scale model of Park Towne Place apartment building in Philadelphia.

This deluxe, four building colony is fully air conditioned by individual "UniTrane" air conditioning for each apartment. The Trane Co. here furnished 2300 UniTrane air conditioning units for this project.

Keating - Raisler, Inc., New York City, was the contractor. Architects were Milton Schwartz, Philadelphia, and John Hans Graham, Washington, D. C.

skyscrapers...schools...

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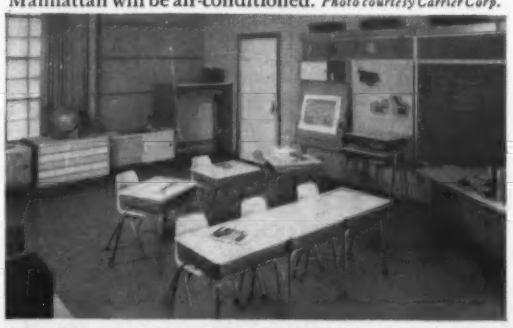
SUPER-DRY REFRIGERANTS

approved! accepted! preferred!

New air-conditioned office buildings like this are changing New York City's skyline every day. By 1960, it's expected that more than 50% of major office space in Manhattan will be air-conditioned. *Photo courtesy Carrier Corp.*



School rooms never used to be like this! Today's classrooms are lighter, brighter—and more comfortable, thanks to modern air-conditioning systems that keep temperatures level and end drafty or stuffy classrooms. *Photo courtesy Brunswick-Balke-Collender Co.*

Wherever modern refrigerants are used for air-conditioning and refrigeration, you can depend on super-dry "Genetrons." For maximum dryness. For unsurpassed quality. For dependable, trouble-free performance. Leading manufacturers of refrigeration and air-conditioning equipment use "Genetrons" for original charge . . . approve them for replacement. Refrigeration engineers specify them. Wholesalers recommend them.

"Genetron" Super-Dry Refrigerants are available from wholesalers everywhere, coast to coast. See your wholesaler. Insist on "Genetron"!

genetron 11 ORANGE LABEL CCl_3F TRICHLOROMONOFLUOROMETHANE
genetron 12 WHITE LABEL CCl_2F_2 DICHLORODIFLUOROMETHANE
genetron 22 GREEN LABEL $CHClF_2$ MONOCHLORODIFLUOROMETHANE
genetron 113 PURPLE LABEL $C_2Cl_3F_3$ TRICHLOROTRIFLUOROETHANE
genetron 114a BLUE LABEL $C_2Cl_2F_4$ DICHLOROTETRAFLUOROETHANE

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GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

In Washington, D. C. Nov. 17-19

BRI To Discuss Effects of Heating Research On Both Heating and Cooling of Buildings

WASHINGTON, D. C. — Effects of today's heating research on the way that buildings will be both heated and cooled in the next few years will be one of the major topics for discussion at the Building Research Institute's fall conferences, scheduled for Nov. 17-19 at the Shoreham hotel here.

As chairman of the program which will set forth "New Methods of Heating Buildings," John Everetts, Jr. of Charles S. Leopold Engineers, Philadelphia, indicates that he expects this full-day session on the opening day of the conferences to bring out developments that will have considerable impact on buildings planned for the 1960's.

New air heating methods, new wet heating systems, and new radiant heating systems will be presented by researchers in these fields, as well as discussion of new electric heating systems including direct resistance heating, heat pumps, and thermoelectric systems.

"And, of course," Everetts said, "no program of this kind would be complete without data on the tremendous progress being made in solar heating, new types of solar collectors now past the experimental stage, new solar energy storage systems, and up to date reports on the solar heated houses currently being studied at several locations in the U. S. and abroad."

Speakers for the program will come from all areas of the country, and all six of them will join in a round-up session at the close of session to point out future research needs in this field.

Open to the public as well as to BRI members and guests, this conclave of the Building Research Institute is the first of a new type of multi-subject conferences to be conducted by BRI each spring and fall.

Other programs during the three-day period Nov. 17-19 will deal with "Sandwich Panel Design Criteria," "Design Potential of Metal Curtain Walls," "Modular Coordination," "Building Research, International," and a complete Building Research Workshop.

According to Thomas E. Werkema, industrial research analyst, Dow Chemical Co., who is general chairman of the event, complete programs and registration material for the conferences will be ready for distribution early in October, and may be obtained on request from Harold Horowitz, Asst. Director for Technical Programs, Building Research Institute, 2101 Constitution Ave., Washington 25, D. C.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Now Representing . . .

Drayer-Hanson, Div. of National-U. S. Radiator Corp.—A. G. KIRKWOOD CO., Metairie, La., has been named sales representative in the Louisiana sector for D-H commercial/industrial air conditioning lines. Handling the same lines in the southwest Texas sector will be The R. S. TYDEN & CO., San Antonio.

Governair Corp.—C. A. DYSON, Tenafly, N. J., was recently appointed as a representative for the northern area of New Jersey.

Council Mfg. Corp.—Appointment of five manufacturer's agents introduces a new marketing program for the company. "Now," it was explained, "as company development has warranted it, we are appointing travel sales agents to assist the distributors in covering their territories."

CHRIS LEWIS, with offices in Mission, Kan., will serve Illinois, Iowa, Kansas, Missouri, and Nebraska. From Lakewood, Ohio, JAMES MOORE will cover Indiana, Kentucky, Ohio, West Virginia, and the western sector of Pennsylvania. Michigan will be serviced by STANLEY NEWMAN, Charlotte, Mich. JOHN J. PATTERSON, operating out of Dallas, will cover Alabama, Arkansas, Louisiana, Mississippi, and western Tennessee. Georgia, North and South Carolina and eastern Tennessee have been assigned to JACK ROBINETT, Charlotte, N. C.

Nitrogen Div., Allied Chemical Corp.—Appointed agents to handle sales for Barrett Brand anhydrous ammonia in cylinders were HAMBLET & HAYES CO., Peabody, Mass., for Massachusetts; INDUSTRIAL CHEMICAL SUPPLY CO., Springfield, Ill., for Illinois; and WM. LYNN CHEMICAL CO., INC., Indianapolis, for central Indiana.

The Trane Co.—FRY BROS. HEATING & AIR CONDITIONING CO., Toledo, has been appointed a distributor of package air conditioning equipment in the Toledo area.

Mid-Continent Metal Products Co. (Chicago)—Appointment of the W. H. LAMBERT CO., Detroit, as exclusive distributor of "Lo-Blast" and "Economite" power gas conversion burners in Florida, has been announced. A new office will be located in the Florida territory.

Freezing Equipment Sales, Inc.—TENNICO, INC., Los Angeles, has been named southern California representative for FES-Fuller rotary boosters. David Nurse, formerly manager of Holland-Nurse Co., North Hollywood, will handle sales contacts in southern California, southern Nevada, and Arizona. Robert B. Holland Co., San Mateo, will continue to represent the rotary booster line in northern California, Oregon, Washington, and portions of Idaho.

Wabash Corp.—JOHN T. DRESBACH, La Habra, Calif., has been named representative for Arizona, California, Nevada, Oregon, and Washington.

Dravo Corp. — CHARLES F. WHEELOCK & ASSOCIATES, Birmingham, Ala., has been appointed distributor of heating equipment for a territory that includes most of Alabama and Mississippi and 10 counties in northwestern Florida.

L. J. Wing Mfg. Co.—BOGART-BULLOCK CORP., Los Angeles, has been appointed southern California representative for air handling and power plant machinery.

Gibson Refrigerator Co., Div. of Hupp Corp.—L & S Distributors, Inc., Tampa, Fla., has been named distributor in 19 Tampa area counties, replacing Traynor-Dean Appliances.

When you think of coils, think first of McQuay with the years of research and know-how which has made McQuay the nation's leading coil manufacturers. McQuay gives you the exclusive Ripple-Fin coils with tubes pressure expanded into wide, full fin collars to provide a permanent bond . . . actually forming a tube within a tube for maximum heat transfer. McQuay coils are made in 5/8", 1/2" or 3/8" tube diameters, one to twelve or more rows, and in the widest possible range of styles or capacities, with a choice of from one to fifteen fins per inch for maximum heat transfer efficiency and to permit accurate balancing of capacities with the design load. They are available for steam, hot water, cold water, direct expansion and refrigerant condensing, and can be made of any required or desired metal or combination of metals. When you specify McQuay you have selected the very best. For information on any coil requirement, call your McQuay representative, or write McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota.

one to 12 rows deep
one to 15 fins per inch

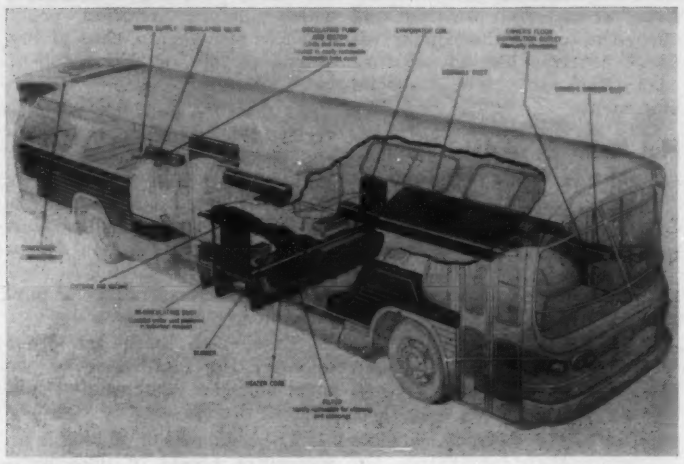
WATER COIL

DIRECT EXPANSION COIL

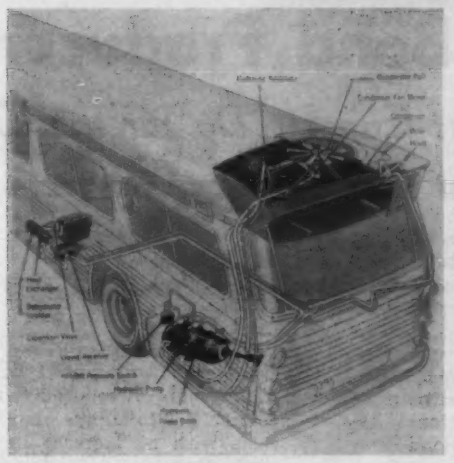
McQuay Means Quality

McQuay INC.
AIR CONDITIONING • HEATING • REFRIGERATION

New GMC Bus Air Conditioning System Designed for City, Suburban Coaches



CUTAWAY view shows working part of new GMC air conditioning system designed for city and suburban buses. It has an output of 2,800 c.f.m. and nominal capacity of 10 tons. This is said to be nearly double that of the firm's 41-passenger inter-city bus model. The unit is said to be adequate to handle peak loads with frequent opening of coach doors.



CONDENSER compartment is located in rear of coach roof. Horizontally mounted fan draws air outside from above over condenser coils and expells it to rear of coach.

PONTIAC, Mich.—A new bus air conditioning system designed for city and suburban buses has been introduced recently by the GMC Truck & Coach Div., General Motors Corp.

The new system has an output of 2,800 c.f.m. and nominal capacity of 10 tons, nearly twice that provided in GM's 41-passenger inter-city model buses.

It weighs 1,400 lbs. and is installed as an extra for about $4,100 on new 45- and 53-passenger GM transit and suburban model buses.

E. W. Hall, advertising manager for the motor coach division, reported that about one third of new orders placed with the division request air conditioning.

Air Recirculated Every 40 Seconds

Capacity of the new model is sufficient for effective cooling under heavy peak loads with frequent opening of doors, Hall said. Air is recirculated completely, every 40 seconds.

Cooling system is located under the coach floor in a bay just ahead of the emergency door. Electrically-driven blowers draw air (20% outside, 80% recirculated) through filters, evaporator coil, reheat radiator, and force it up into the coach interior through sidewall ducts with outlets at the top just below the windows.

No Additional Ductwork

Cooling system is integrated with standard heating and ventilating and involves no additional ductwork. Refrigeration compressor is gear-driven from main engine, requiring no additional power plant or belts.

Condenser compartment is in rear part of coach roof. Horizontally mounted fan draws air outside from above over condenser coils and expells it to rear of coach. Heavy pad of foam rubber insulates sound and vibration from interior of coach.

Compressor has four cylinders, two permanently loaded, two unloading individually. Maximum speed is 2,750 r.p.m. at 1,850 engine r.p.m. Minimum speed is 625 r.p.m. at 450 engine r.p.m.

High-low pressure switch automatically shuts off system when pressure rises too high or drops too low. Condenser fan is run by hydraulic pump, belt driven from the compressor.

Company recommends tinted glass and white painted roofs for air conditioned coaches.

THE STORY ON MILITARY HEAT PUMP INSTALLATIONS

The facts behind the rumors in the

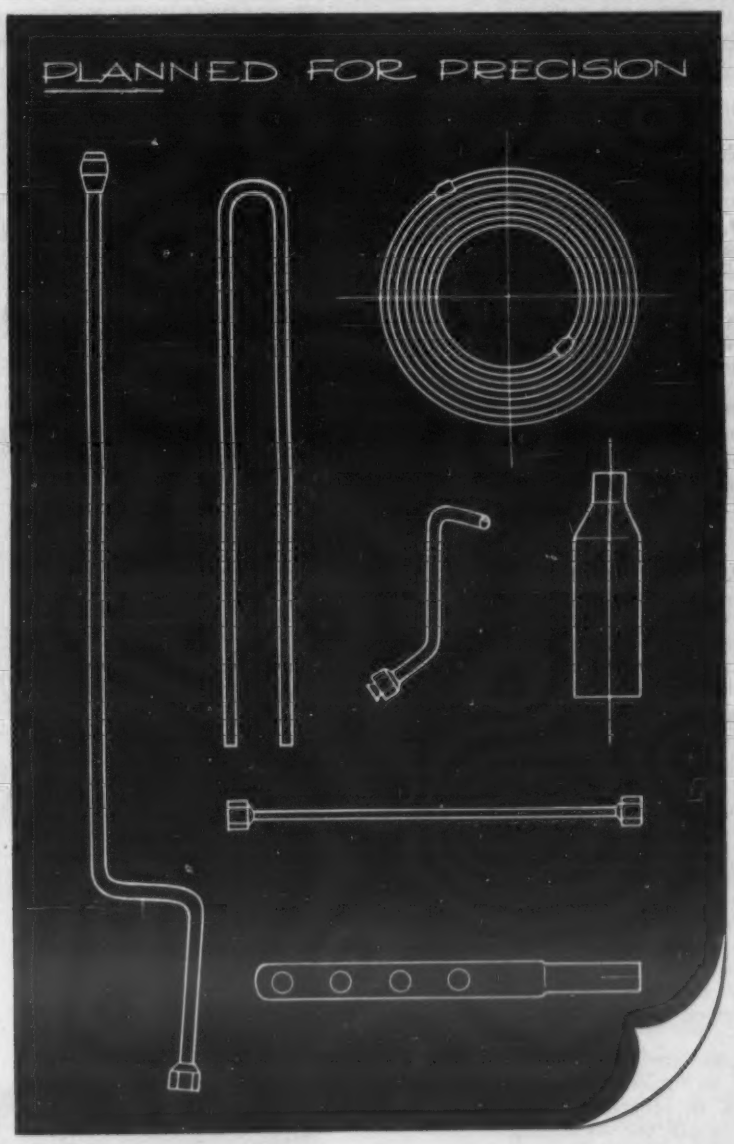
Sept. 21 Heat Pump Issue

NOW

IS THE TIME TO CALL

H&H

ABOUT YOUR SPRING AIR CONDITIONING NEEDS



Need help with a tough design problem? Temper and grain size not right? Ready for prototypes? H & H engineers, metallurgists and others, stand ready to help you with these and other problems preliminary to the manufacture (or procurement) of air conditioning parts made of copper tubing. To obtain maximum assistance and in plenty of time to meet projected manufacturing schedules, you are invited to write, wire or call H & H Tube and Manufacturing Company *now*.

H&H TUBE AND MANUFACTURING CO.

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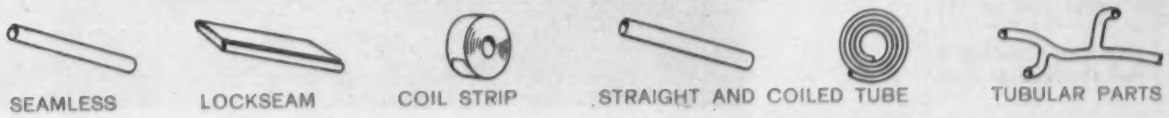


Surety Bond Producer

What Can He Do for the Contractor? What Does He Expect from Him?

MIAMI BEACH, Fla. — What can the surety bond producer do for the contractor and what does he expect from the contractor?

Answers to these questions were offered recently by William R. Phillips, chairman of the board of the National Association of Surety Bond Producers.

He spoke to a meeting of plumbing contractors, but what he had to say applies equally well to heating and air conditioning contractors.

Pointing out that surety bonds give positive protection in many situations where no other form of security is either practical or obtainable, he . . .

- explained the difference between surety bonds and insurance.
- outlined what is necessary to qualify for maximum surety bond credit.
- stressed the importance of adequate bookkeeping and cost accounting procedures.
- discussed relationships between general contractor bonds and subcontractor bonds,
- and enumerated aids the surety bond producer can offer the contractor.

Suretyship and Insurance Differ

"There is an essential difference between suretyship and insurance," Phillips explained. "The business of insurance contemplates the certain occurrence of losses, and is written with the expectation that losses will occur with some regularity.

"The rates are calculated on the basis of producing sufficent premiums to cover losses and expenses, and leave some underwriting profit.

"In suretyship, the principal (you, the contractor) and not the surety company has the primary responsibility and the obligation to meet any losses which may develop.

"In theory, sound underwriting should eliminate any principal who is not able to meet his contractual oblications, or who does not have sufficient assets to meet the contingency of a default.

"Of course, surety losses do occur, due to catastrophes, and to changes in economic situations over which the contractor has no control . . . and to defects in our underwriting.

"The rates for suretyship should not be calculated on a statistical or analytical basis. The cost should be called a service charge, rather than a premium.

"'Banks lend credit . . . surety companies guarantee credit. But they do much more than that.

"In the case of contract bonds, they guarantee performance in strict accordance with plans and specifications. An insurance policy can be cancelled at any time, but a surety bond binds a company to the bitter end of the contract.

All contractors are finding it necessary to seek maximum lines of surety credit under today's economic conditions. I believe there are several factors governing this:

"1. Inflation
"2. Excessive taxes against earnings
"3. Low profits in relation to volume, due to higher labor costs with no increase in production
"4. Continued unstable material costs and fixed overhead that cannot be absorbed, except through a continual increase in work load.

"Notwithstanding the reasons, may I suggest to you the requirements necessary to qualify for maximum bond credit?

"1. Character and reputation
"2. A good credit rating
"3. Financial responsibility as related to the volume and class of work
"4. Provision for hazards inherent in the class of work
"5. A proven, experienced organization
"7. CPA verified financial statement
"8. Sufficient net liquid assets.

"The net liquid assets, or working capital, of the contractor, in relation to the uncompleted work on hand, should be enough to finance the total volume of work to be accomplished, as well as to meet emergencies, such as:

"Delay in receipt of payments from the general contractor; stoppages and slowdowns occasioned by strikes; delays in delivery of material; weather, and such. On top of that, home office executives like to see that cash item in your financial statements.

Not Keeping Adequate Books Is Great Hazard

"One of the greatest hazards to a contractor is the failure to have completely adequate bookkeeping and cost accounting procedures. Many a contractor will take test borings, check sources of materials, analyze his past bids and those of his competitors to make up a bid . . . but he will often neglect his bookkeeping. In these days it is more important than ever before, for a contractor to have adequate cost accounting and bookkeeping.

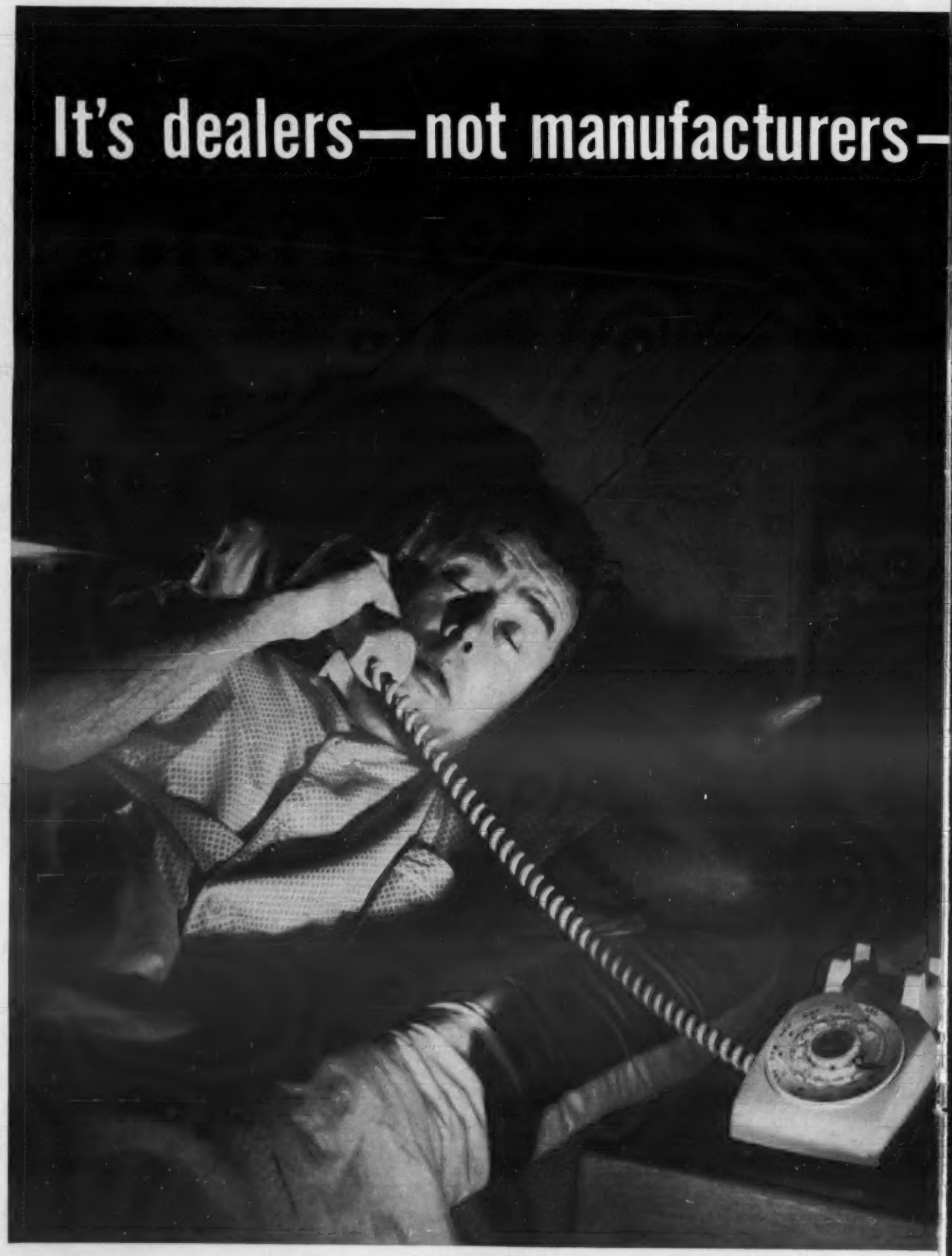
"It is my judgment that the surety industry can best serve the construction industry by requiring you, the contractor, to file CPA verified statements which include itemized profit and loss statements, thus giving a true picture of the status of your operation.

"If the CPA does not actually verify the accounts receivable and accounts payable, bank account, etc., then these items should be listed . . . names, addresses, and amounts, so that the surety company can verify them. However, the CPA verified statement serves your purpose best.

"Then, too, there are other underwriting factors, which we must consider in arranging subcontractors' bonds.

"The comparison of bids is an important aspect of underwriting, and this is often impossible.

It's dealers—not manufacturers—



Bids of the general contractors are easily available. However, we find that the surety bond producer is unable to check the bids of other subcontractors. Furthermore, it is not always known how far the general contractor has driven the subcontractor down from his original proposed price. So, there is often lacking that important gauge to determine whether the sub's bid is too low.

"Too often the surety is faced with an adverse selection. Many generals will bond only those subs on whom they entertain doubts. When such a practice by a general is known, extra precaution is necessarily exercised in reviewing the proposed bond. Generals desiring bonded subcontractor protection, will be able to cover their needs more easily if they enjoy a reputation of bonding across the board.

"A general contractor's reputation regarding his treatment of his subs is an important element. Just as some owners may be meticulous and uncompromising, so may the general contractor be.

"It is important that both the subcontractor and his surety appraise this factor, since the general can be of tremendous help or hindrance when a tough situation develops.

General Contractor's Ability Important

"The ability of the general contractor to do the job is an important consideration. If he stumbles around and delays, or runs out of money, this will adversely affect the subcontractor.

"The fact that the sub may have eventual recourse against the general's bond is at times of small solace, particularly if the sub can't weather the financial crisis of slow pay, or no pay, and because of some controversy, is required to endure a lapse of time before collection of the general's bond can be effected.

"There are losses a sub may suffer, which he can't recover from the general contractor's surety: such as the loss in effectiveness of his work force, if he has to proceed erratically, or the loss due to a new labor rate scale being imposed, due to the job running behind.

"Perhaps in this category should be mentioned the hazards facing contractors due to the failure or incompetence of another sub.

"We are familiar with the squabbles between plasterers and electricians, who must often work in close collaboration . . . and there are others. A good sound general contractor will prevent as much as possible such difficulties; but a troubled or financially insecure general will not be of much help. Hence, a certain amount of underwriting the general is part of the sauce of underwriting the sub.

"I would urge that you prepare your proposals most carefully . . . that you always make provision for all contingencies, and then figure a reasonable profit on your jobs.

"There is often the question: Shall the bonds be placed with the producer and/or surety company of the subcontractor's choice, or that of the general contractor's choice?

"That question I leave for you to decide. As you probably know, the AGC, the Surety Association of America, the Association of Casualty and Surety Companies, and the National Association of Surety Bond Producers, have endorsed the idea that a general contractor be privileged to place his bond with the producer and company of his own choosing.

"It naturally follows, then, that if the subcontractor has his own surety connection, and if it is an able producer representing a reputable company, it is a logical extension of this philosophy to let the subcontractor use his own surety connections.

"There should always exist a close relationship between the contractor and his surety bond connection. Your producer and your surety company are your silent partners in your contracting ventures.

"When a contractor is entitled to surety credit, he should be able to obtain it. Because this business requires specialists, the contractor should do business with a surety bond producer who has sufficient experience to properly present his case.

"Surety specialists are continually called upon to consider cases that have been declined by another agent and his company. In most of these instances, the bonds are finally written.

"Usually they were declined by the first company because improper information was submitted. The surety company should require full information, that it may fully know the contractor.

Bond Producers Try To Build Up Clients

"Every conscientious bond producer is constantly trying, constructively and intelligently, to build up his clients from small operators into large contractors. We consult with them in countless ways concerning their operations.

"We try to assist them with their banking connections, their personnel, their contacts with engineers, architects, and awarding bodies. We study their contracts to eliminate undesirable obligations, which the contractor should not assume.

"We advise concerning necessary insurance coverages. We assist in the arbitration of disputes. We help them form joint ventures. We keep them posted concerning contemplated projects and bids wanted.

"We try to arrange suretyship to cover maximum commitments, consistent with their experience, ability, organization, and financial strength.

"There has been more construction work awarded the last few years than ever before. Notwithstanding all this work, contractor failures are pyramiding. No one knows the answer to this perplexing problem.

"It is obvious that work has been bid too cheaply. But is this the only reason for failures? Was the work improperly supervised? Was it that the contractor operated on too little liquid resources? Did he invest beyond his needs in equipment? Did he divert his liquid assets into secondary assets? Did he become largely an office operator, and leave the field supervision primarily to others?

"Apparently a combination of these various factors has been operating in the construction industry, because the failures have not been confined altogether to the young, inexperienced, and improperly financed contractors, but have included contractors who were apparently well qualified in every respect.

"The contractor's ability to absorb a loss is of prime concern to the surety, as it is to you, the contractor, because, without properly appraising that possibility, a losing contract may put you out of business."

—who get called out at night

The manufacturer sleeps snugly—all night long—although the Smiths may call *you* at 2 A.M. Their furnace has stopped running, it's miserably cold outside—and the baby is sick. Who crawls out of bed, makes the hurried service call in the pre-dawn darkness? Not the manufacturer!

An awareness of this fact shapes the product and policies of Lennox. It's one of the reasons you, the dealer, are recognized as the most important person in the entire organization.

As a businessman—with plenty of problems of your own—you're entitled to the very best help and cooperation from your equipment suppliers. Lennox takes this responsibility seriously—and it's the heart beat of the direct factory to dealer relationship.

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They'll Do It Every Time

by

Jimmy Hatlo

PHOOTKISS-- WHAT ARE YOU DOING HERE? I THOUGHT YOU WERE ON VACATION!
I'M NOT DUE IN TILL MONDAY, CHIEF--- BUT I KNEW THINGS WOULD BE SO PILED UP HERE---LAST TIME I WAS AWAY THINGS GOT INTO SUCH A MESS---
WHY THAT @#.!!O!! GRANDSTANDER! MAKING BELIEVE THE JOINT WOULD GO TO POT WITHOUT HIM!!
YOU KNOW WHAT THEY SAY ABOUT GUYS WHO NEVER TAKE VACATIONS--- "CHECK THEIR BOOKS!"
WHAT'S THE DIFFERENCE? WHEN HE IS HERE HE DOESN'T DO ANYTHING BUT POLISH THE OL' APPLECART!
THE REASON HE CAME BACK EARLY--- HIS OLD LADY CAN'T STAND HIM ANY MORE THAN WE CAN----
9-11
CASING THE OFFICE SWALLOW WHO SHOWS UP EARLY AT CAPISTRANO---
THANX AND A HATLO HAT TIP TO "SORRENTO," DAYTON, OHIO
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Air Conditioning Can Be a 'Gasser'

TEEN-AGERS have a lingo all their own. There's one in our house (most of the time, in fact, several—counting his friends). To these tall young fellows anything that is a big opportunity, from a girl who winks, to a future career is a "gasser."

To gas utilities, air conditioning looms up as a genuine "gasser" under that definition. Not only a "gasser," but a potential life-saver!

Gas companies lose money in most cities five or six months of the year—the warm months. These losses they must recuperate during colder months when gas heating lifts their load factors.

Said sad situation is reflected in the rates they charge users.

Gas-fired air conditioning, if sold and installed extensively, could change all that. Summer cooling by gas—if pushed hard enough by utilities—could convert red-ink months into profitable periods.

That happy situation, in turn, could result in lower rates to consumers—making gas an even more attractive fuel.

Reverse side of the coin is that continued growth of *electric* all-year air conditioning systems for homes, commercial and industrial buildings, threatens the future existence of gas itself as a power source.

Electrically powered air conditioning normally includes oil heat blown by an electric motor and fan. Or it can be reverse cycle (all electric) or include electric radiant heating.

One thing leads to another, and next thing you know the gas stove is gone and in comes an all-electric kitchen. Poof! goes the gas business.

Hence, as a defensive maneuver, gas utilities should get into air conditioning with both big feet.

That they are eager to do so long has been apparent. Trouble has been: lack of equipment to sell.

This is being remedied. Bryant is introducing a remarkably versatile and flexible residential unit. Ready-Power, Carrier, and Arkla have developed interesting products for gas utilities to promote. And powerful RCA-Whirlpool is getting into the act.

The door opens!

Unlike electric utilities, the gas companies are faced with no capital investment problems by the air conditioning load.

The former must build new facilities both to generate and distribute the additional "juice" required for air conditioning. In the case of residential installations, these additional distribution facilities presently are deemed somewhat uneconomic by many in the electrical business.

For gas utilities it's a different, far happier story. All they have to do is open the spigot a bit wider. Overnight, if needed, they can double their delivery capacity at practically no extra cost.

So here's the "gasser" in brief:

(1) Gas utilities need the additional summer load which air conditioning can provide, because they lose money during the warm months.

(2) Inroads of electric powered all-year air conditioning threaten to turn their profitable winter months into red-ink periods.

(3) Fortunately, expanding into the air conditioning field requires no additional capital investment. All it needs is money for advertising, promotion, and selling.

Obviously, to gas utilities, air conditioning is a real "gasser."

Tired of Paying Income Taxes?

BELIEVE it or not, there are countries which do not levy an income tax of any kind—the Bahamas, Tangier, and Bermuda. Countries which don't tax income earned outside their borders include the Netherlands, the Antilles, Liberia, Brazil, and Argentina.

Australia, Canada, and Uruguay exempt American corporations from local taxation under certain circumstances. Nations which do not levy upon holding companies—Switzerland, Liechtenstein, Luxembourg are among these—are growing in number.

Thanks to these "profit sanctuary" situations, foreign earnings remain tax-free until distributed back home. Thus they can be invested and re-invested without penalty. That's one among many reasons why there's a growing trend for American corporations to establish manufacturing, processing, and marketing subsidiaries abroad.

What's in it for these "favoring nations" in question? Simple. They gain commerce, dollars, and investments which might have passed them by had they not proffered tax enticement. Higher wages, greater employment opportunities and, in the long run, larger over-all revenues result.

The moral seems to be: if you want more business, cut taxes!

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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"The mass of people must be barbarous where there is no printing, and consequently knowledge is not generally diffused. Knowledge is diffused among our people by the newspapers."—*Sam Johnson, Boswell's Life,* March 31, 1772.

INLAND EMPIRE ASSN. PUBLISHED OWN CODE

Inland Empire Code Association, Inc.
246 Third St.
San Bernardino, Calif.

Editor:

I wish to extend our sincere thanks from the Inland Empire Code Association on your recent article published in your news on our new Code Book.

At this time I wish to point out one error, the article stated that Spradley Enterprises published the book. However the Inland Empire Code Association, Inc. is the publisher and we also have copyrighted the book. Mr. Spradley only has a contract with us to print and distribute the book for our association.

Further information may be obtained from our association on request.

Sincerely,
H. H. HART,
President

MAGNETIC CLUTCH DATA OFFERED BY WARNER

Warner Electric Brake & Clutch Co.
Beloit, Wis.

Editor:

We noted with interest one of your reader's requests for data on magnetic clutches used in automobile air conditioning.

Our clutch is a stationary field design. The field is mounted to the compressor end plate, the rotor and armature assembly to the compressor shaft.

In mounting the clutch the field must be centered concentric

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with the shaft so as to prevent interference between the field and rotor.

The Warner compressor clutch has been designed to provide trouble-free operation, without adjustments of any kind, for the life of the clutch when properly installed. However, it should be periodically inspected for the following:

1. Belt tension and alignment.
2. Clean, tight, insulated electrical connections.
3. Leakage of grease from the sealed bearing in the rotor-pulley assembly.
4. Accumulations of grease or oil on the pulley, V-belt, or rotor and armature friction surfaces from an external source. Any extraneous grease or oil should be removed with carbon tetrachloride.

If any of your readers desire additional information, we shall be pleased to furnish our brochure AA103 free of charge. It may be procured by writing directly to the factory.

CLARK OLIVER,
Sales Supervisor

DUNWOODY INSTITUTE SEEKS EQUIPMENT

The William Hood Dunwoody Industrial Institute
Minneapolis 3, Minn.

Editor:

We noticed in your July 20 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS that L. K. H. of the unspecified company is interested in contacting schools who want to buy working models of cooling equipment.

Please give Mr. L. K. H. my name and the name of Dunwoody Industrial Institute. My job at Dunwoody Institute is the coordination of our overseas projects.

It is likely we may be interested in buying some of the equipment offered by this company for one of our overseas schools.

K. N. RAO,
Coordinator International Services Div.

SEEKS POST IN REFRIGERATION SCHOOL

106 Grange Avenue
Ottawa, Ontario, Canada

Editor:

I am a refrigeration journeyman here in the city of Ottawa, having worked in the industry since graduating from high school in 1954. I love refrigeration and air conditioning in every phase but my real ambition is to become a refrigeration instructor in some school. Since the industry has not expanded in this country like it has in the United States, I have to look towards your country if I hope to achieve my life's ambition.

I would appreciate it very much if you could tell me how one goes about becoming a refrigeration instructor, and if there are any possible openings in this field.

WILLIAM PODD, JR.

NAW Booklet Describes Career Opportunities

WASHINGTON, D. C. — The National Association of Wholesalers, 1001 Connecticut Ave., N.W.,, Washington, D. C., has released for distribution a new booklet describing "Career Opportunities in Wholesaling."

The three-color, 12-page booklet details the wide variety of career opportunities open to high school and college graduates.

Price is 25 cents per copy.

'Noise Control In Buildings' Is Topic Of BRI Publication

WASHINGTON, D. C.—"Noise Control In Buildings," a 150-page book designed to contribute practical information on this subject, has been published by Building Research Institute.

The proceedings of the 1959 BRI Conference on Noise Control In Buildings, the book has three major divisions: "Fundamentals of Noise Control," "Control of Transmitted Sound," and "Elimination of Noise In Air Conditioning and Other Mechanical Equipment."

In the realm of the latter, Alfred L. Jaros, Jr., prominent New York engineer, presents in the book "a model specification to help eliminate many of the objectionable sounds emanating from these sources," BRI said.

Copies of the book are available from the Building Research Institute, National Academy of Sciences-National Research Council, 2101 Constitution Ave., Washington 25, D. C., at $5 each.

Detroit Controls Names Sylvan E. 'Red' Leinwand

DETROIT—Sylvan E. "Red" Leinwand has been appointed eastern regional manager for Detroit Controls Div. of American-Standard, with headquarters at Stratford, Conn., A. L. Fuller, sales manager announced.

Leinwand

Leinwand, who has been a specialist on navy controls and refrigeration in this region, succeeds K. B. Thorndike, who has recently retired.

MANUFACTURERS

To obtain maximum results from your participation in the ARI 11th Exposition, plan to use these three issues of the NEWS.

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OCTOBER 19

Use the Pre-Show Issue to attract and invite visitors to your booth, to interest them in the products you'll display.

◆

NOVEMBER 2

The Big Show Issue which will be distributed to show-goers from our booth. Always one of the most popular issues of the year.

◆

NOVEMBER 16

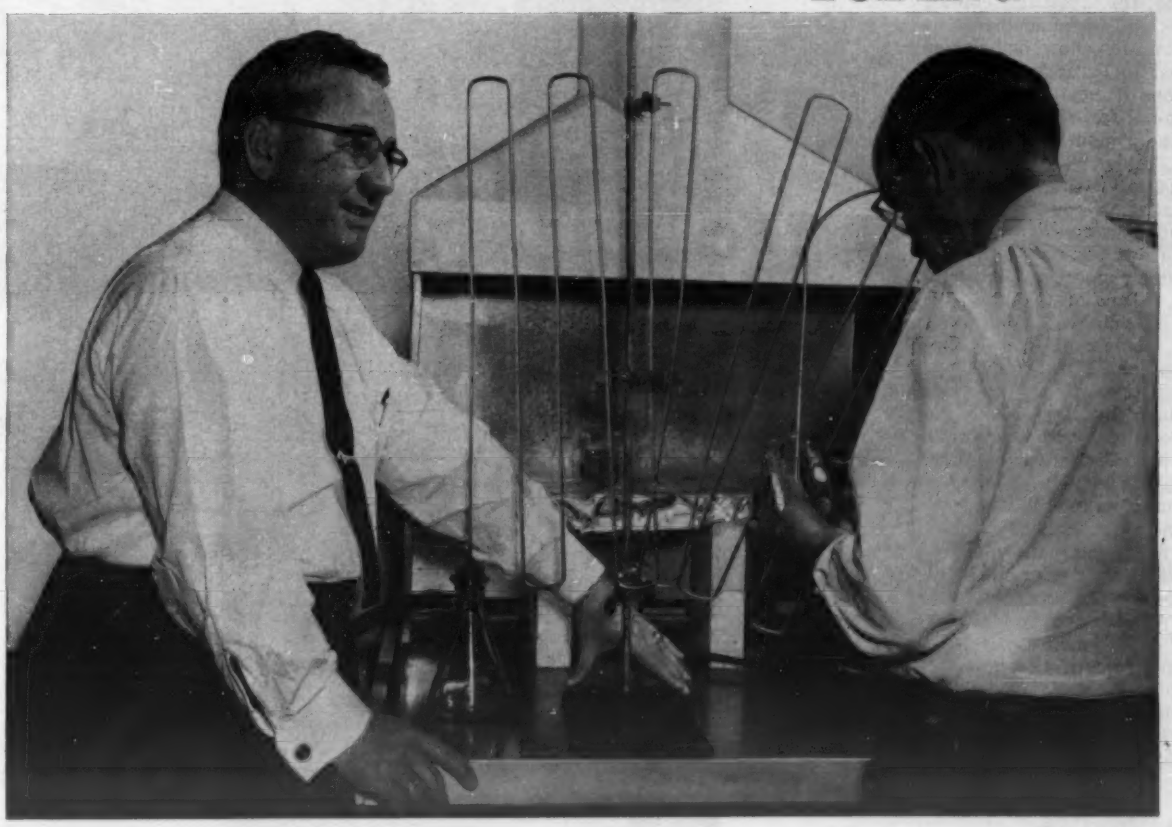
The Convention-In-Print Issue which will wrap-up all the important happenings at the Show. Use this issue to re-sell all those who visited your booth while their visit is fresh in their minds.

◆

Send us your space reservation today . . . or contact your regular NEWS representative.

THE PEOPLE WHO KNOW REFRIGERATION BEST

DEPEND ON THE PEOPLE WHO KNOW TUBING BEST!



His name, Bill Sullivan. His job, GM Steel Tubing Sales Engineer. His specialty, saving tubing dollars for leading refrigeration manufacturers. He likes his job, for he knows that GM Steel Tubing is quality controlled beyond specifications for greater strength and dependability, and *it's the cleanest you can buy*. His knowledge of the industry comes in handy at the planning stage of any job involving top-quality steel tubing. He can recommend the best and most economical means of satisfying your specifications on existing high production manufacturing equipment. And he can help you cut costs in tubular refrigeration components and still retain maximum efficiency. Put some on test today. You'll see why GM Steel Tubing leads in refrigeration sales . . . *by miles*.
Rochester Products Division of General Motors, Rochester, New York.

See Sweet's Catalog 1a/Ro

GM STEEL TUBING
BY ROCHESTER PRODUCTS

AMERICA'S LARGEST MANUFACTURER OF REFRIGERATION TUBING

OASIS remote-type air-cooled gas air conditioner.

Day & Night Bows Remote Air-Cooled Gas Conditioner

LA PUENTE, Calif. — Introduction of the "Oasis" remote-type air cooled gas air conditioner has been announced by Day & Night Mfg. Co. here.

The absorption-type unit "offers complete installation flexibility," it was stated. "The cooling unit itself is installed wherever it is convenient in an outside location. It supplies chilled water to the compact cooling coil which is installed inside on the upflow, downflow, or horizontal forced-air furnace for a year-round comfort system—or to the ceiling-hung fan-coil blower unit where the system is for cooling alone."

No special wiring is required for installation—only a 110-volt connection, the company pointed out. Thermostatic connections, a gas service connection, and supply and return water lines between the outside cooling unit and the inside cooling coil complete the job.

Introduction of the gas air conditioner by Day & Night "was preceded by over a year of full scale field-testing of these units throughout the country in actual full-time installation service," the announcement said. "These field tests confirmed the high efficiency performance already indicated by tests made during development under laboratory conditions."

Top features of the unit, according to A. J. Horn, Day & Night heating and air conditioning sales manager, include operating economy, long-life expectancy, and quiet operation.

Despite Rumors

NAHB Plans Only One Convention-Exposition During 1960--Mitnick

WASHINGTON, D. C. — If you have heard rumors that the National Association of Home Builders is going to hold two convention-expositions in 1960, don't believe them, says NAHB President Carl T. Mitnick.

Noting that it has been brought to his attention that such reports have been circulated, Mitnick said:

"To set the record straight—only ONE NAHB convention-exposition will be held in 1960. It will be held in Chicago on Jan. 17-21. The exhibits and programs will be staged in the Chicago Coliseum and in the Hilton and Sherman hotels."

Product of AGA PAR Program

7½-Ton Gas Air Conditioner Designed To Operate 5 Seasons Without Major Servicing

NEW YORK CITY—The first eastern installation of a new 7½-ton gas air conditioning system claimed to be capable of operating at least five cooling seasons without major servicing is reported by the American Gas Association (AGA), sponsor of research contributing to the system's development.

The unit, placed in operation recently at the Public Service Electric & Gas Co.'s Central Gas Plant, Piscataway Twp., N. J., is powered by a "long-life" natural gas engine developed under A.G.A.'s PAR Program (Promotion, Advertising, and Research).

Manufactured by the Comfortemp Div. of Comfort Products, Inc., Dallas, the air conditioner is designed to run at least 10,000 hours before overhaul, with only one service call required per cooling season, according to the AGA.

Heart of the system is a four-cylinder, four-cycle gas engine designed and built by Continental Motors Corp., Muskegon, Mich., in cooperation with AGA's PAR Task Group for Air Conditioning Research.

AGA currently sponsors nearly a dozen projects in an accelerated program to increase gas industry penetration of the air conditioning market.

"Many of the long-life design features developed through PAR-supported research are incorporated in the engine powering the Comfortemp system," it was stated.

"They include a heavy-duty crankshaft and main bearings, stellite valves and valve seats, a wear-resistant distributor, rotating valve lifters, and advanced manifolding and carburetion. Fuel consumption is rated at about 20 cu. ft. of natural gas per ton per hour.

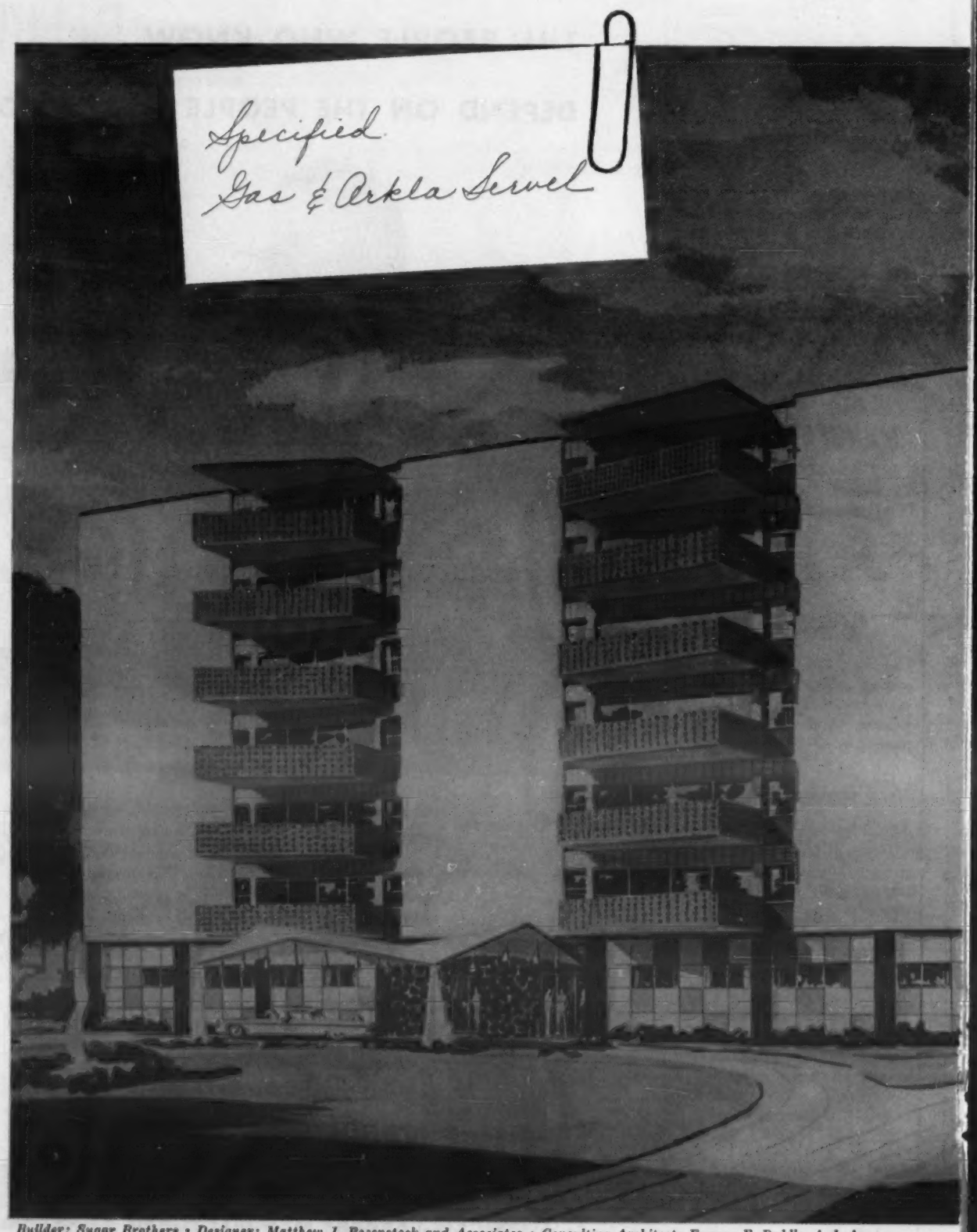
"The new air conditioner employs an air-cooled condenser, permitting customers to effect savings in both water and plumbing costs. The condenser, engine, and compressor are housed in an outdoor unit measuring about 3 by 3 by 6½ ft.

"The cabinet interior is acoustically insulated, contributing to the system's low noise level, and the entire unit is thermostatically controlled in the one-story Public Service office building cooled by the system."

Public Service's new air conditioner was designed by E. F. Bilger, Comfortemp production and engineering manager, and was installed under the supervision of Paul Schonfeld, senior designer for the New Jersey utility's Gas Department.

Budlock Gets Charter

BATON ROUGE, La.—Secretary of State Wade O. Martin, Jr., has granted a foreign charter to Budlock Refrigeration Supply Co., Inc., Evansville, Ind., to do business in Louisiana.



Builder: Sugar Brothers • Designer: Matthew J. Rosenstock and Associates • Consulting Architect: Eugene F. Peddle, A. I. A.

Survey Reveals Other Facts

Graduates of Sheet Metal Apprentice Programs Rise Rapidly, Says Labor Dept.

WASHINGTON, D. C.—More than one out of every four apprentices who graduated from formal apprentice programs as sheet metal journeymen in 1950 within six years advanced to foreman, supervisor, or employer.

This fact is revealed by figures compiled by Joseph H. Schuster of the Bureau of Apprenticeship, U.S. Dept. of Labor.

Schuster sent questionnaires to a representative group of journeymen who completed apprenticeships in 1950. Among the questions was one about what they did in 1956.

The answers reveal that if in 1956 you had talked with an average group of 100 from the sheet metal apprentice graduating class of 1950, you would have found 17 supervisors and foremen, 10 contractors and employers, and 71 journeymen. Only a few of the graduates would have been out of the trade.

Here are some other facts that Schuster learned about this average group of 100:

Fathers of 17 had been in the trade before their sons decided to apprentice.

Eighty-six attended high school and 59 graduated from high school. All had completed elementary school.

Ninety-six were veterans of whom 81 received GI assistance while apprenticing. Eleven would not have been able to complete their apprentice training had it not been for this assistance.

Parents or relatives thought so highly of the sheet metal trade that they urged 52 to apprentice. Employers spurred on another 22. Union officers and school teachers were important in persuading the others.

Sixty-two of the journeymen went directly to the employers and asked to apprentice; 17 went to unions; 5 applied to joint apprenticeship committees; and the rest used other methods.

Contractors who want to read Schuster's report can find it in the May issue of *Construction Review*, a monthly magazine of the U.S. Labor Dept.

Wins City Hall Contract

ANDERSON, S. C.—On their low bid of $4,585, S. T. King and Richard Ruhle have been awarded a contract by the Anderson City Council for air conditioning City Hall here.

Auto Air Conditioning Manufacturers' Group Adopts New Identifying Emblem

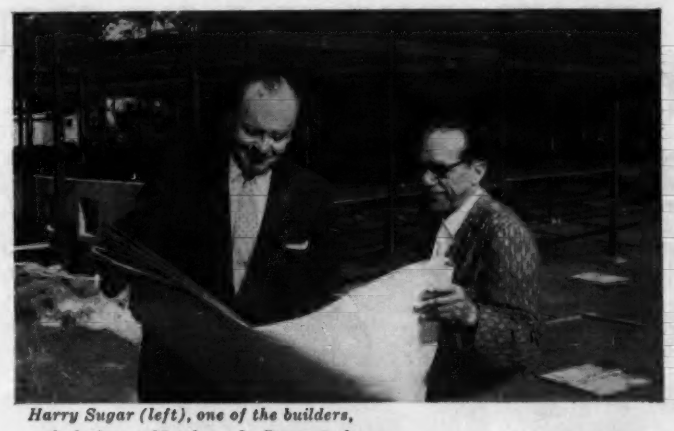
OKLAHOMA CITY — A new identifying emblem—a blue and gold circular insignia—signifying membership in the Automotive Air Conditioning Manufacturers' Association is now being displayed by 13 manufacturers of complete refrigerated systems, the group announced.

The association meets every two months. The governing body consists of an executive committee, whose personnel rotates within the membership.

The present chairman of the executive committee is H. Dale Jordan, of the Frigiquip Corp., Oklahoma City, one of the organizers of the group four years ago. Other members of the executive committee are: S. R. Hollingsworth of John E. Mitchell Co., Dallas; D. A. Brown of A.R.A. Mfg. Co., Grand Prairie, Texas; and Bert J. Mitchell of Frigikar Corp. of Dallas.

In addition to the above-named firms, members of the association include: The Cartrol Corp., Kansas City, Mo.; Clardy Air Conditioning Co., Fort Worth, Texas; Capitol Refrigeration, Inc,. Dallas; Climatic Air, Dallas; The Forston Co., Houston, Texas; International Auto Air Conditioning, Fort Lauderdale, Fla.; Lindustries, Inc., Fort Worth; Parkomat Mfg. Co., Inc., Dallas; and Eaton Mfg. Co., Cleveland.

Akron's 7-story Carlton House to be cooled with individual Arkla-Servel units



Harry Sugar (left), one of the builders, and designer Matthew J. Rosenstock

Individual **GAS** *units to cool and heat new $2 million apartment house*

Akron's luxurious Carlton House will mark the largest use of individual gas air conditioning units in a single apartment house.

Summer cooling and winter heating will be provided for the suites by 58 three-and-a-half and five ton Arkla-Servel Sun Valley gas air conditioners.

The Arkla-Servel gas air conditioning units were chosen after serious consideration of all types available. The designer insisted that each apartment have individual thermostat control as well as individual installations to eliminate the need for large compressors and any possible vibration. Because gas is also used for cooking as well as heating and cooling, there was no need for installing heavy cable, either.

The Arkla units will be installed in the utility rooms of each suite. Four small water towers, located on the roof, will provide condensing water for the system. The water will be constantly recirculated, thus keeping its cost at a minimum.

Check the facts and you too will see that modern Gas air conditioning out-performs all others. For specific details call your local Gas Company's air conditioning specialist, or write to the Arkla Air Conditioning Corporation, General Sales Office, 812 Main Street, Little Rock, Ark. *American Gas Association*

for Cooling, **GAS** *is Good Business*

RACCA of Sacramento Summer Short Course Drew 37 Registrants

SACRAMENTO, Calif. — A total of 37 registered for the summer short course for refrigeration journeymen sponsored by Refrigeration & Air Conditioning Contractors Association of Sacramento District.

Ariel Hinds, trade extention coordinator, made arrangements for two-hour classes twice a week for five weeks. Modern facilities at Sacramento City college were used. Instructors were Ken Swaski of California Market Equipment and Henry Guilmette of Pacific Scientific Co., San Francisco.

Sacramento City college is cooperating with RACCA in arranging instruction for refrigeration journeymen and apprentices during the regular college year.

Trion Wins Contract For Air Cleaning System In N. Y. Bldg.

McKEES ROCKS, Pa.—A contract to supply the entire air cleaning system for the new First National City Bank Building, now under construction at 339 Park Ave., New York City, has been awarded to Trion, Inc., here.

Trion said it will supply 34 electronic air cleaning units with a total capacity of 1,100,000 c.f.m. Seven of the units will be custom packaged models and 27 will be field assembled. All are HCC (high capacity) units and are equipped with automatic washers.

555 Cooling Division Getting New Building

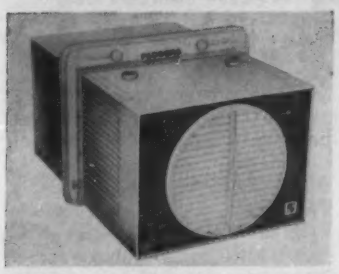
LITTLE ROCK, Ark.—A new building of black brick is being constructed here for the Heating & Air Conditioning Div. of 555, Inc. To cost $115,000, it will contain 21,000 sqq. ft. of floor space.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

2 of 38-Model Line



FEDDERS 1-hp. "Minute Mount" casement window air conditioner shown above and the heat pump air conditioner below are two models in the 38-model Fedders room air conditioner line for 1960. (See story in Sept. 7 issue).

Remington Domestic Shipments of Room Units Up 47% for Season

AUBURN, N. Y. — Domestic shipments of Remington room air conditioners for the current season were 47% greater than for the same period a year ago, according to Herbert L. Laube, president of Remington Corp.

Available statistics indicate 1959 nationwide retail sales some 23% ahead of 1958, with factory shipments about a standoff for the two years, according to Laube. Heavy inventory carryover at dealer-distributor levels from 1958 has been wiped out, with stock rooms now relatively bare, a favorable omen for the 1960 season, he pointed out.

"The most obvious reasons for a good season," it was stated, "were the early and sustained hot weather experienced this summer in many parts of the country, generally improved business conditions, and threatened wider application of the 10% federal excise tax on air conditioners.

"Another factor that contributed to the sales increase experienced by Remington and other manufacturers, was a continued reduction, since 1957, from 51 national brands produced by 26 manufacturers to 32 brands and only 19 manufacturers.

"Much as we like to feel that the room air conditioner has become an all year specialty selling item," Laube said, "it can not be denied that no substitute has so far been found for an early and sustained period of hot weather."

Klepper, Kelly, Kane Appointed To Philco Posts

PHILADELPHIA—Three key appointments within the Consumer Products Div. of Philco Corp. were announced by John A. Rishel, general manager-merchandising of the division.

They were: Owen W. Klepper as sales promotion manager-merchandising department; John E. Kelly as advertising manager-merchandising department; and, John J. Kane as manager of market-development-electronics.

The move consolidates the merchandising department's advertising and sales promotion functions, and Klepper and Kelly will have responsibility for this work for all Philco consumer products, including refrigerators, freezers, and air conditioners. Klepper was formerly advertising-sales promotion manager for laundry equipment and air conditioners. Kelly was formerly advertising-sales promotion manager for television receivers.

Philco Dealers to Acapulco

PHILADELPHIA — Flights originating in New York City, Miami, and other major points will take over 300 Philco air conditioner dealers to Acapulco, Mexico, Sept. 19 and 26 for eight-day sojourns. The dealers qualified for the trip as a result of Philco room air conditioner sales during the past season.

Perfection Names P. H. Gauthier

CLEVELAND — P. H. Gauthier has been appointed contract sales manager for heating and air conditioning products for Perfection Industries, Div. of Hupp Corp., it was announced here by Carl W. Millsom, vice president in charge of sales and advertising.

P. H. Gauthier

Gauthier joins Perfection after serving five years with Remington Corp. Previously he spent two years as branch manager in the Kentucky-Illinois-Indiana area for Servel, Inc.

Welbilt Promotes William Miller

MASPETH, N. Y. — William "Bill" Miller has been promoted to sales manager of the Room Air Conditioner Div. of Welbilt Corp., it was announced by M. W. Morris, vice president.

Miller has been New York regional sales representative for Welbilt. He has been with the firm since 1938 when he joined it as a sales representative. Miller replaces Howard Landis.

Newly-Created Gibson Post Goes to Hamper

GREENVILLE, Mich.—L. W. Hamper, Jr., has been named to the newly-created post of merchandising manager for Gibson Refrigerator Co., division of Hupp Corp., it was announced by W. C. Conley, vice president in charge of Gibson sales.

Conley also announced that R. R. Powers has joined Gibson as administrative assistant in the sales department. Formerly, Powers was a district sales manager for Vining Sales, Gibson's distributor in western Michigan.

Advertises Room Units on B. T. U.-per-Dollar Basis

ST. PETERSBURG, Fla.—Air conditioner advertising run recently by the Acme Co. here and in Clearwater promoted the units on a B.t.u.-per-dollar basis.

The company advertised 10,200 B.t.u. air conditioners for $129, or 79 B.t.u. per dollar; 14,000 B.t.u. units for $259.95, or 54 B.t.u. per dollar; and 17,000 B.t.u. units for $279, or 61 B.t.u. per dollar.

SOME ANACONDA "FIRSTS" THAT HELP CUT COSTS IN AIR CONDITIONING AND REFRIGERATION

"Tri-Wall Pak" on pallet carrying bunch coils of copper refrigeration tube ⅝" O.D. x .022" gage in lengths 700 to 750 feet long. Note ease of stacking and ready access to coils. Empty cartons are simply folded flat for compact disposal.

Disposable reel carrying 700-foot coil of copper refrigeration tube ⅝" O.D. x .025" gage. Net weight of tube, 124 lb., weight of reel, 12 lb. Disposable reels are furnished in a number of sizes —eliminate returns and bookkeeping on empties.

In the pictures above you see two examples of Anaconda "firsts" that are helping the refrigeration and air-conditioning industry cut costs and improve the efficiency of their equipment.

LONG COILS: Anaconda was the first to provide refrigeration-quality seamless copper tube from .032" to ¾" O.D. and various wall thicknesses in unjointed lengths up to 5,000 feet, depending on size. Coiled tube is furnished in level-wound, bunch, pancake, or semipancake coils to fit individual needs. Level-wound coils can be supplied on disposable reels.

Long coils have many advantages. They provide uniform O.D. and wall thickness for automatic finning . . . save set-up and threading time . . . produce a minimum of scrap ends, and frequently eliminate the need of a standby operator. When changes are made in model design, long coils in stock make change-over in lengths easy and economical.

SPECIAL PACKAGES: Anaconda Copper Refrigeration Tube is shipped in a number of specially designed packages to protect the tube in shipment and handling, to provide compact storage, and to permit high-speed unwinding on automatic continuous-feed fabricating equipment. These include lightweight, sturdy, disposable reels that end returns and bookkeeping on empties. And the "Tri-Wall Pak" makes for compact, safe inventory storage and easy access to individual coils.

Whether your requirements for refrigeration tube are standard or special, Anaconda can provide the size of tube and coil that will satisfy your needs best, packaged to meet your stock room and fabricating requirements most economically. For further information, write: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

5927

ANACONDA®

SEAMLESS COPPER TUBE FOR REFRIGERATION AND AIR CONDITIONING

Made by The American Brass Company

Cooling Off

Air Conditioning In the Public Eye

Is there a relationship between hot, humid weather and overtime parking? Ticket-writing E. W. Taylor, police chief in Petersburg, Va., says there is. In hot weather, motorists forget about their time limit when they get into air conditioned shops, he reasons.

* * *

Some chickens aren't as dumb as they are made out to be. One hep hen in Hartshorne, Okla., clucks her way into the air conditioned office of auto dealer Dan Voltur and deposits her eggs in his wastepaper basket.

* * *

City fathers of Anderson, S. C. may have hit on a way to get air conditioning for the city council chamber at little or no cost.

On torrid nights this summer perspiring citizens waiting to do business with the council have offered to chip in and help the council purchase air conditioning.

* * *

"Warts" are what some Washington, D. C. architects have been calling the air conditioning cooling towers and equipment penthouses that jut up over the roofline of many capitol buildings. They want the District Commissioners Planning Advisory Committee to do something about these "unsightly excrescences."

The Council accepted the challenge and may have recommendations ready by fall. Each architect, of course, has his own idea of what he would do with them.

* * *

While other Colorado wheat farmers have sweltered in hot air superheated by their combine motors and gulped dust from chaff and wheat beards, young Kenneth Timmerman worked in cool comfort. His combine features a glass enclosed cab cooled by a 1½-ton air conditioner. His neighbors kidded him at first, he admitted, but not for long.

* * *

Whenever we see a headline in the newspapers saying "Beat the Heat" or something similar, we always read it to see how they will plug air conditioning.

But when that headline caught our eye in a recent issue of the *New York Times,* we read these suggestions for outwitting high temperature and humidity:

"Buy and wear stockings that are half-size larger than you ordinarily take.

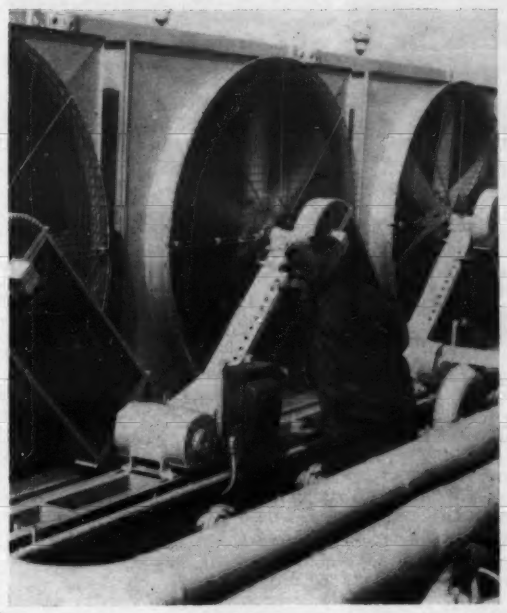
"De-fuzz your legs of superfluous hair. Spray them and your arms with a summery cologne."

La de da!

* * *

For people who like to eat in air conditioned restaurants but don't like to get out of their car, two drive-ins in North Carolina and Salt Lake City are offering a happy compromise. Along with hamburgers and malteds, they are dispensing conditioned air through hoses mounted on the support poles holding electronic ordering devices.

From Alaska to . . . . . Cypress Gardens



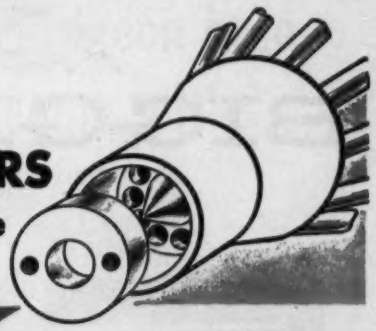
AIR CONDITIONING THE ARCTIC — Alaska may be known for its cool climate, but some of the largest air conditioning units are in the 49th State — even up in the frozen Arctic. They have been installed by the U. S. Army Engineer District, Alaska at remote defense outposts to make sure temperatures and humidity are ideal for costly and complicated electronic equipment. Constant temperatures keep the electronic gear operating at maximum efficiency with a minimum of repairs and replacements. Here Allen Wooldridge, engineering specialist with the Alaska District, checks a roof-top installation at an Alaska military base.

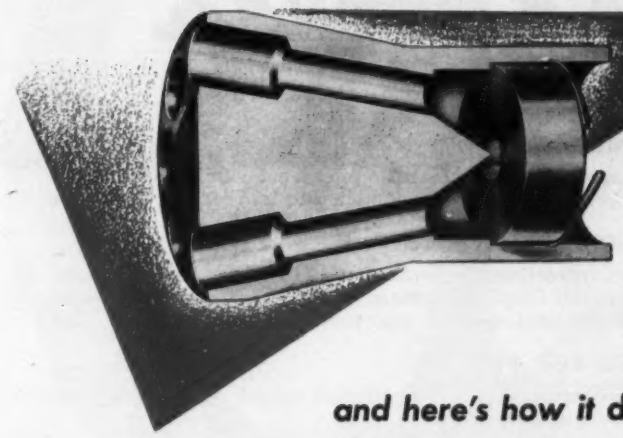
FRANKLY, this picture ain't got much to do with it, but Typhoon claims that it has furnished a goodly amount of air conditioning equipment to maintain comfortable conditions for customers and employes at Cypress Gardens, Fla. Oh, yes, we almost forgot to mention that Typhoon air conditioning, installed by Air Conditioning Distributors, Inc., Tampa, Fla., also protects thousands of dollars worth of film inventories at the Gardens.

Sporlan

REFRIGERANT DISTRIBUTORS

with the Versatile Interchangeable Nozzle

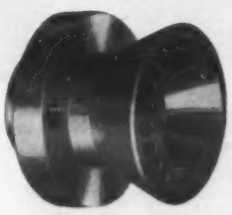




give controlled distribution *to* every circuit... every time!

and here's how it does it!

The velocity of the liquid-vapor mixture of the refrigerant is increased by the flow through the nozzle orifice. Also the turbulence created by the pressure drop causes a homogenous mixture of the liquid and vapor. This refrigerant mixture, while still at high velocity, is then immediately deflected by the conical button and fed equally to each circuit.



in addition . . . the versatile interchangeable nozzle affords custom selection for any refrigerant or capacity. Coils can be stocked with distributors already attached and proper capacity nozzles can be selected either before delivery or on the job.

The removable nozzle simplifies visual, air, or test wire inspection at coil and distributor connections.

Final coil and distributor leak test made easy prior to valve installation.

Get controlled distribution to every circuit, every time . . . buy Sporlan Refrigerant Distributors with the Versatile Interchangeable Nozzle for Peak Performance on all direct expansion multi-circuit evaporators, regardless of load or temperature. Better still, buy Sporlan Right Down the Line and get Peak Peformance throughout!

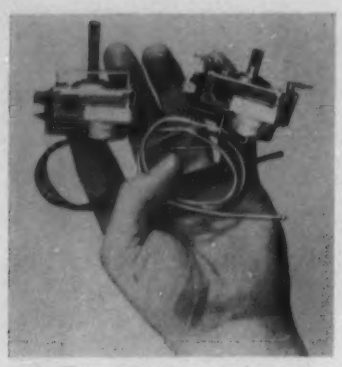
See your Sporlan Wholesaler today . . . and be sure to ask him for Bulletin 20-10.

Our 25th Anniversary
1934 . . . 1959

SPORLAN VALVE COMPANY
7525 SUSSEX AVE. ST. LOUIS 17, MO.

EXPORT DEPT. 85 BROAD ST. NEW YORK 4, N. Y.

G-E Controls Have Gas-Charged Bellows



● Two new temperature controls, the 3ART-5 for domestic and commercial refrigeration systems, and the 3ART-15 for room air conditioners, have been introduced by General Electric's Appliance Control Dept., Dept. AH&RN, Schenectady 5, N. Y.

The small cold controls are powered by a short-stroke bellows charged with refrigerant gases. The gas-filled bellows operates against a lever and coil spring that produces quick and accurate temperature changes, according to company engineers. The snap-action mechanism makes or breaks contact with a bounceless action and the new design provides a wide choice of differentials, it was stated.

Custom made to meet each original equipment manufacturers' requirements, the new controls can be mounted in any position with a variety of bracket designs. A wide selection of knob coupling arrangements, capillary length, terminal style, calibration, temperature settings, and other specifications are tailored to customer's requirements, G-E said.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Washers, Dryers Clean All Washable Fabrics

● The 1960 line of Kelvinator washers and dryers provides automatic home laundering of all washable fabrics, ranging from heavy denims to delicate women's apparel, from washable woolens and cashmere sweaters to wash and wear garments, according to Kelvinator Div., American Motors Corp., Dept. AH&RN, Detroit 32.

The "Style Mark" line includes four automatic washers that pair with three automatic clothes dryers in a choice of gas or electric models. Simplified operation and design are among line highlights, it was stated.

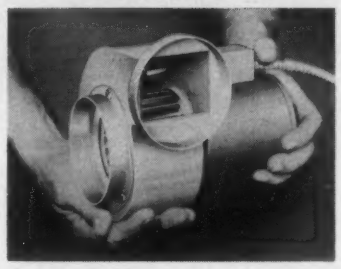
Flux Packaged In Unbreakable Bottle

● Its #599 silver solder flux is packaged in an unbreakable "conolene" plastic bottle, according to Wabash Corp., Dept. AH&RN, 2300-18 South Western Ave., Chicago 8.

Each bottle contains a brush attached to the sealing cap, it is pointed out.

This is the same flux that has been used by servicemen for over ten years for all types of silver solder brazing, the company pointed out.

Vent Exhausts Gases From Unit Heaters



● A new motorized vent exhauster it has developed permits use of gas unit heating in office buildings, older manufacturing plants, and multiple-story warehouses, according to Reznor Mfg. Co., Dept. AH&RN, Mercer, Pa.

"The 'Reznor Venter' vents exhaust gases from unit heaters directly to the outdoors through the side wall of the building," the company explained. "It requires only a short length of standard, lightweight 4-in. pipe. Lack of a chimney is no longer a problem."

The Venter also permits greatly extended use of floor model direct-fired heaters in the home, it was stated.

In residential applications, the Venter exhaust is taken through a hole in the floor, and then carried out under the floor to the outside.

The Venter is claimed to be "half the size and price of similar capacity units." Powered by a permanently lubricated, fan-cooled electric motor, it is thermostat controlled. The model V300 is used with heaters from 25,000 up to 300,000 B.t.u. input. An adapter is used for attaching the Venter to the flue.

Gordoneer Boilers Add Tankless Heaters

● New "Gordoneer" Series 2G steam and hot water boilers has been announced by Roberts-Gordon Appliance Corp., Dept. AH&RN, Buffalo 6.

An added feature, the company pointed out, is the availability of built-in instantaneous finned tankless hot water heaters. Hot water coils are available in the 3.5 and 5 g.p.m. models.

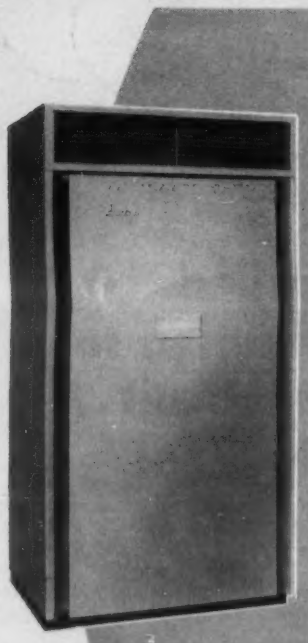
Boiler sections are made of cast iron. The raised port cast-iron gas burners are said to be accurately drilled for quiet, efficient "blue flame" combustion. Burners are specifically designed for each boiler, the company said.

Wet base combustion chamber completely surrounds prime heating surface. Sediment collects in the wet base to maintain high heat transfer on the prime heating surfaces, it was stated. Jacket is insulated with aluminum foil-faced glass fiber in order to minimize heat loss.

"The units are tested and capacity rated in accordance with the Code of the Institute of Boiler & Radiator Manufacturers," the company said.

"Capacities: 100,000 to 290,000 B.t.u.h. input."

You get a BIGGER PROFIT from Curtis



Packaged air conditioning units —3 through 20 tons.

Here are three important reasons why...

MINIMUM SERVICE

Long operational life of Curtis equipment combined with peak performance, assures more customers and less service requirements.

PRE-SOLD PROSPECTS

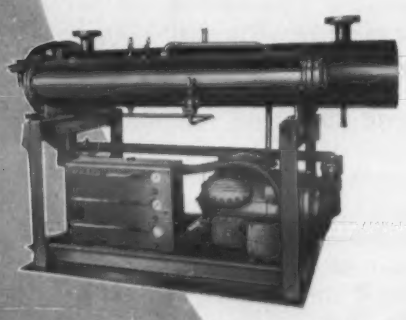
National advertising beamed at virtually every prospect category helps pre-sell Curtis equipment for you. Curtis provides sales and promotional aids to make your selling job easier.

PRICED FOR PROFITS

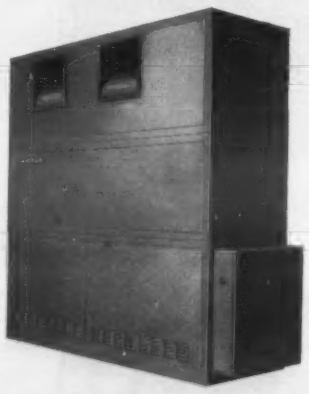
All Curtis equipment is competitively priced, with a very generous profit margin for you!

Remember, there is no finer, more efficient, durable line on the market today. Depend on Curtis for quality and profit.

Packaged Air Cooled Air Conditioning Units —2 through 7½ tons. Residential and commercial applications.



Packaged Liquid Chillers—7½ through 100 tons—F-12 or F-22—with new 1959 Curtis Motor-Compressor Unit.



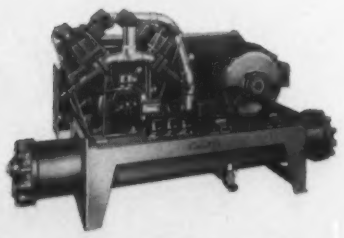
Packaged Air Conditioning Units—20 through 50 tons—with the new 1959 Curtis Motor-Compressor Unit.

REMEMBER YOU CAN COUNT ON Curtis

MANUFACTURING COMPANY

REFRIGERATION DIVISION

Write: Dept. 1 • St. Louis 20, Mo.



Condensing units up to 100 tons —F-12 or F-22.

C-54

OUR 105th YEAR

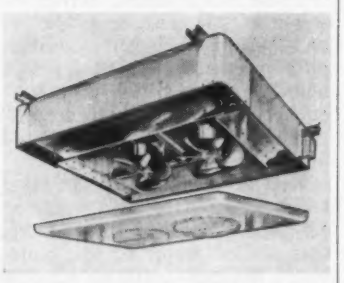
Simplicity Features Furnas Motor Starter

● Simplicity is the key note of its new magnetic motor starter, according to Furnas Electric Co., Dept. AH&RN, 1111 McKee St., Batavia, Ill.

"This advanced design, rated through 15 hp. 440-550 volts, incorporates many new control features, such as: All components front removable, dual voltage coils reconnectable on the job, 'trip-free' thermal overload relays with trip indicator," the company said.

"Also, field modification kits are available to add pushbutton or selector switches, pilot light, auxiliary contacts, or third overload relays to a basic starter. Visible contacts permit quick inspection.

"The encapsulated dual voltage magnet coils are moisture and fungus resistant and are rated 110-220 or 220-440 volts, 50-60 cycles. A molded terminal board in each coil eliminates leads and simplifies coil voltage selection. Coil accepts plug-in pushbutton or selector switch."



D-H Low Sides Have Heat Exchanger Inside

● Newest entry in its line-up of low side refrigeration products is a compact new "Tri-Way Spasaver" unit, it was announced by Drayer-Hanson, Dept. AH&RN, 3301 Medford St., Los Angeles 63.

The high temperature unit cooler (for rooms over 34° F.) is said to offer designer/planners "extremely low headroom architectural flexibility."

A key feature is the broad range of sizes offered by the seven-model series—nominal capacities range from ½ ton to 2 tons. Another sales factor is noted as the inclusion of heat exchanger, mounted within the unit.

The unit's name derives from fact that it may be ceiling suspended, sidewall positioned, or corner mounted. A three-step installation process only is required in the field, it was stated. Servicing "is made simple as separate bottom pan member is easily removed with entire unit opening for easy reach." It was also stressed that D-H "has fabricated this product with total Rivenut and bolt/nut construction—no sheet metal screws are used."

Swaging Tool Operates In Close Quarters

● A new screw-type swaging tool—for use on aluminum, brass, and copper tubing where "sweat-type" fittings are needed—is being offered by The Imperial Brass Mfg. Co., Dept. AH&RN, 6300 West Howard St., Chicago 48, Ill.

This tool, the company said, can be operated in even the closest quarters where it's impossible to use a conventional punch-type tool because of obstructions or limited space.

The new tool (No. 94-S) swages all three of the popular plumbing sizes—½ in., ⅝ in., and ⅞ in. o.d. tubing (⅜ in., ½ in., and ¾ in. nominal).

"The yoke is made of rugged forged steel and has the latest slip-on feature," it was pointed out.

"Once the clamp and yoke are in place there's no guess work in lining up the tube. A tough chrome-plated plunger centers itself over the tube, right where you want it. Just a few easy turns swages most tubing . . . only slightly more for others. It's easy to change the adaptor to work on any one of the three tubings sizes, too."

New Wall Thermostat For Electric Heat

● A new double-pole disconnect version of its contemporary-styled electric heat wall thermostat was recently introduced by White-Rodgers Co., Dept. AHRN, 1209 Cass Ave., St. Louis 6, Mo.

Offered as a companion to the White-Rodgers Type 1A65 "Elegance" thermostat, the new double-pole model is called Type 1A66. Primary use of the 1A66 is areas where wiring codes require a positive break of both sides of a 240-volt line. It is finished in gold and beige vinyl-leather.

"As a special feature to make wiring easier, a 'strip gauge' has been molded into the back of the control, showing the exact amount of wire needed to fit the terminals," the company noted. "A ground connection is provided for additional safety. Front wiring allows quick, positive connections; the switch fits any standard 2 in. by 3 in. outlet box."

Manitowoc Adds Retarder, Freezer

● Two new products, a retarder and a freezer, have been announced by the Manitowoc Equipment Works, Dept. AH&RN, Manitowoc, Wis.

"Both offer compactness, modern square styling, vacuum-tested cabinets and condenser systems that keep outer walls dry even in sticky weather," the company said. "The outside dimensions of both are the same: height, 69⅞ in.; width, 36 in.; cabinet depth, 24 in.

The retarder, identified as

"Bakerator" model FR-370B, has 17-cu. ft. capacity and can be equipped with aluminum side racks for either 38 or 24 bakery pans. In the new freezer, the 21-cu. ft. Bakerator (FB-380B), temperature range is from 6° F. to -20° F., it was indicated.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Imperial Jobbers can tailor-make your Freon hose assembly needs in any size—any length with...

IMPERIAL
REFRIGERATION HOSE AND RE-USABLE COUPLINGS

Fast, efficient, extra-profitable installing or servicing of any refrigeration or automotive air conditioning job *demands* Imperial heavy duty Freon-12 Hose and Re-usable couplings.

This hose is designed for automotive air conditioning and other Freon applications —not to be confused with other light-weight charging hose. Has minimum permeation.

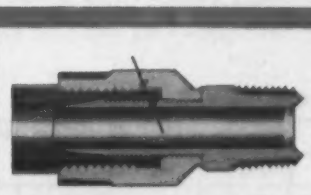
Hose is supplied in coils . . . can be quickly made up to any length of line with desired end connections.

Get the facts NOW! And remember Imperial for your requirements of charging and testing units, charging lines and tube working tools.

Imperial refrigeration hose and re-usable couplings are the ideal combination for installing or servicing all these and other Freon-12 refrigeration systems:

- Automotive air conditioning
- Refrigerated trucks
- Pullout units
- Overnight charging lines for dairy trucks
- Refrigeration plates for trucks
- Air conditioned buses
- Vibration absorption lines

This is the stock your Jobber has to give you quick service. Contains 70 re-usable couplings in a steel cabinet, 50 ft. each of 3 sizes of hose, assembly mandrels; a complete service center to meet all your requirements.



Safety-Lock Construction Hose flows into two special recesses, one in coupling body and one in insert, forming a Safety-Lock Grip for extra strength.

IMPERIAL

THE IMPERIAL BRASS MFG. CO.
6300 W. Howard St., Chicago 48, Ill., Dept. ACHR-99
In Canada: 18 Hook Ave., Toronto, Ontario

Emblem of Quality

FITTINGS • VALVES • DRIERS • CHARGING LINES • TOOLS for cutting, flaring, bending, pinch-off, swaging.

To Become Air Conditioned 'City'

Complete First Section of Air Conditioned Sidewalk Mall at Exchange Park In Dallas

DALLAS — Duct installation has been completed on the first 875-ft. section of air conditioned sidewalk mall at Exchange Park here.

This first enclosed sidewalk connects the Exchange Bank building with Braniff International Airways headquarters building. Eventually the malls will extend over a mile, as buildings are completed.

Exchange Park, an air conditioned city-within-a-city scheduled for completion within a few years, is said to be the most advanced development of its kind in the nation.

The electric system approach of 13,800/480/277 volt was adopted early in the planning of the city after an analysis by General Electric Co. engineers, Dallas consultants, and George Bostock, vice president and chief engineer for Exchange Park.

Advantages of Using Load-Center Principle

Using the load-center principle, the system approach lowers first costs, reduces voltage drop, and eliminates long, high-loss secondary feeders when load is added, it was pointed out.

The result is a reliable, safe, economical, flexible, easy-to-expand electric system, according to Bostock. This suits the needs of the city, which now includes two major office buildings and the utilities building.

Two more major office buildings, a 1,000-room luxury hotel, prestige department store, medical research hospital, and 150 retail shops are being added to complete the park.

Air conditioning contractor is the Farwell Co., Inc., and Sam P. Wallace & Co. is building contractor. Both are Dallas firms.

The utilities building comprises the heart of the air conditioning system. It was constructed with two Babcock &

ABOVE: Completed section of air conditioned sidewalk mall allows businessmen to walk 875 ft. from Exchange Bank Bldg. to Braniff International Airways headquarters without leaving the air conditioned comfort found in their own offices.

WORKER lays concrete block to conceal completed duct installation on sidewalk mall.

Wilcox boilers, and there will eventually be five boilers.

Two 1,000-ton York compressors, a 1,000-ton Worthington dual compressor, and a 2,500-ton York compressor have been installed, also. Four others will be added as the project-load warrants.

These compressors, driven by steam at 235 p.s.i. and 400° F. and equipped with variable-pitch propeller-type compressor blades, achieve better than 80% efficiency at loads as low as 30% rated capacity, it was pointed out.

Refrigerant-11 and 12 systems are used to chill water at the central location. Pipes bring this chilled water to the buildings through utility tunnels. Buffalo centrifugal blowers propel air over chilled water coils and then the air goes to mixing boxes throughout the building.

Steam is sent at boiler pressure to each building, where pressure is reduced. Hot air is produced in a blower-coil similar to the chilled water setup, and then sent to the mixing boxes.

Mixing units are controlled by Minneapolis-Honeywell thermostats in each zone, which vary the proportion of cold air as required for the space. The individual zones vary in size from 80 to 200 sq. ft.

Double-Duct System Almost a Necessity

A double-duct system such as this one is almost a necessity in Dallas, where during many days one side of the building would require cooling, and the other heating. The system also simplifies humidity control by reheating air dehumidified by the cooling process.

Both hot and cold air Buffalo blowers introduce fresh air into the system continually. Special

NEW

ADVANCED DESIGN—

FURNAS ELECTRIC CONTACTORS For AIR CONDITIONING, REFRIGERATION, HEATING

These compact contactors are designed for heavy duty service and can be mounted in any position.

- 20, 30, 40 amp, 2, 3, and 4 pole devices all have interchangeable mounting dimensions.
- Molded coil is moistureproof, available with screw terminals, quick connect terminals or leads.
- Magnet design has "No Kiss Potential" feature—positive pull in and drop out. Low inrush characteristic.
- Contactor is not a "throw-away" device. Coils and contacts can be readily changed in the field.
- UL Listing.
- 550 Volt Ratings.
- Pressure connectors on all poles eliminate necessity of looping and bending wires.
- Auxiliary terminals available on all contactors.
- Normally closed poles available.
- Contacts are visible and easily inspected.
- Lugs available on all 40 amp devices to accommodate up to #6 wire.
- One-piece molded arc box and base construction assures positive alignment.
- Available in Open and Nema 1 enclosed types. Wrap-around cover facilitates ease in wiring.
- Contacts are of premium-grade Silver-Cadmium Oxide material. All contact springs are stainless steel.

CLASS 41
ACTUAL SIZE

Furnas also features a complete line of controls for your particular application. Some of these are:

—20, 30, 35, 50 amp current rated starters for use with hermetic motors.
—Industrial starters through 100 HP.
—Part-winding starters, through 200 HP.
—Reduced voltage primary resistance starters.
—Reduced voltage autotransformer starters.
—Special Control Panels.

CONTACTOR RATINGS

RATINGS	20 AMP		30 AMP		40 AMP	
	240 V	550 V	240 V	550 V	240 V	550 V
FULL LOAD	20	10	30	15	40	20
LOCKED ROTOR	120	60	180	90	200	100

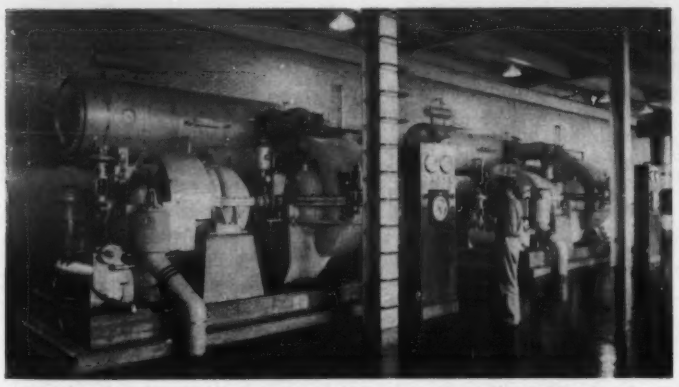
SPECIFICATIONS

CONTACT RATINGS	20, 30, 40 amp continuous duty. Contacts replaceable.
CONTACT TERMINALS	Pressure connections on all models.
COIL TERMINALS	Screw type, quick connect type or leads. Coils can be easily changed.
COIL RATINGS	6 to 550 Volts A.C.
POLE ARRANGEMENT	2 - 3 - 4 pole normally open. (Normally closed available on request.)
ENCLOSURES	Open type and Nema 1.

FURNAS

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

WRITE FOR FREE BULLETIN 41-B1



INSTRUMENT panel shows operating conditions of each compressor unit and is checked regularly by maintenance technician for readings.

ducts deliver part of the return air to the main units, and the remainder is exhausted into equipment rooms.

A supervisory control center designed by Minneapolis-Honeywell provides visual representation of operating conditions throughout the entire utilities plant.

At the center of a 30-ft. long enamelled steel wall, every component of the plant is outlined in miniature, with the piping systems in color-coded lines. Jewel lights indicate equipment in operation, and both fluid pressures and temperatures are recorded continually.

The utilities building contains provision for nine cooling towers, and three are already installed. There are adequate shops for maintenance personnel.

A 250 g.p.m. well provides water for site watering and cooling tower make-up. The boiler is fed by city water, it is pointed out.

The local electric utility delivers 13.2 kv power to the site, which is distributed by the owner via 13.2 kv loop with unit substations in the various buildings.

When Exchange Park has been completed, Dallas businessmen can leave their air conditioned home in the morning, get into an air conditioned car, park in an air conditioned garage, and walk along an air conditioned mall to an air conditioned office.

They can lunch in one of several fine restaurants, shop for anything from gourmet delicacies to hi-fi equipment, and do their banking—all in controlled atmosphere.

Sturtevant Supplies Air Handling Equipment For Detroit's Cobo Hall

BOSTON—Air handling equipment and auxiliary apparatus for the Detroit Civic Center's Cobo Hall is being supplied by Westinghouse Electric Corp.'s Sturtevant division.

Cobo Hall, a 10 acre, three-story exhibit and meeting building, will be linked to the Convention Arena to form the largest building of its kind in the world.

The equipment being supplied by Westinghouse includes 63 "Airfoil" centrifugal fans, 20 ventilating sets, 23 "Precipitron" electronic air cleaners, axial flow fans and air handling units, and propeller and cabinet-type unit heaters and cooling coils, according to the announcement.

The total air supply apparatus including the Precipitron air cleaners will supply more than 3,600 tons of air per hour and exhause slightly less than this amount.

The mechanical contractor for Cobo Hall is The Stanley Carter Co.; the sheet metal contractor, the Robert Irsay Co.; the engineers and architects are Giffels & Rossetti.

Machine Using Hot Water To Produce Cooling for University Building

HARTFORD, Conn. — A machine which uses hot water to produce cooling has been selected for the air conditioning system in the University of Hartford's new general classroom building, it was announced by Robert L. Doyle, Carrier Corp. branch manager.

K. R. Graham, Inc., here, mechanical contractor for the project, named Carrier as supplier.

Hot water at above normal boiling temperatures supplied under pressure from a central plant activates the cooling equipment and is the source for winter heating and domestic warm water.

The three-story structure containing more than 125 class, seminar, conference and lecture rooms, laboratories, and offices, will accommodate 1,000 students. Now being built, it is expected to be completed in time for the 1960 fall semester.

A. F. Peaslee, Inc., general contractor, has overall charge of construction for the $2 million academic building and central heating plant.

Daily capacity of the absorption chiller for the classroom building is equal to cooling produced by the melting of 250 tons of ice, it was pointed out. It will be energized by 340° hot water.

It is planned that future buildings on the 150-acre site in northwest Hartford will also use high temperature water year-round.

The hot water will be circulated from a boiler plant through underground pipes to all buildings. Each structure will have its own absorption refrigerating machine, which produces chilled water according to demand.

The new university, chartered early in 1957, joins together three established local institutions: Hartford Art School, Hartt College of Music and Hillyer College.

Hospital Annex To Be Cooled

EVANSTON, Ill. — Construction has been started at St. Francis hospital here on an air conditioned addition to house a diagnostic and treatment center. The one-story addition will cost about $690,000.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Are You Paying Premium Prices For Your Pipe Wrapping?

Compared With Thin, Non-Corrugated Wraps, NoDrip Tape Gives You Double Protection At Half The Cost!

THREE INSULATING BARRIERS in
NO Drip TAPE
1. OUTSIDE
Rough surface prevents free circulation of moisture-filled air—creates dead air barrier.
2. ¼-INCH THICKNESS
Built-in moisture barrier assures utmost insulating efficiency.
3. INSIDE
Dead air is trapped between "corrugated strands", forms added insulation barrier.

NoDrip Tape means more profit and customer satisfaction on every job . . . saves you time, labor and material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps . . . inferior wraps.

Why pay more when you can buy the handy 16 foot roll of ¼" thick NoDrip Tape at less than the cost of a roll of ordinary ⅛" wrapping?

Next time an equipment cold line job calls for *permanent* protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too . . . holds temperatures more constant and increases the efficiency of the cooling equipment.

NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with . . . forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.

NO DRIP PLASTIC COATING... PROTECTION FOR BIG AREAS

For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

Easy to Apply...

EVEN AROUND JOINTS, TEES, VALVES OR ANGLES

Mortell COMPANY

Makers of Mortite Caulking Cord and Mortite Caulking Gum

J. W. Mortell Company, Dept. 3
549 Burch St., Kankakee, Ill.

O.K.! Send me full information about the complete line of Mortell refrigeration products.

I'm a Jobber____ Dealer____ Servicemen____

Name____

Firm____

Address____

City____ State____

Janitrol Restyles Product Brochures

COLUMBUS, Ohio—Four new product brochures, "completely restyled in a crisp, contemporary format," are now available for distribution, according to the Janitrol Heating & Air Conditioning Div., Surface Combustion Corp.

"The new literature features full-color cover designs that have previously received national advertising awards," it was noted. "Each brochure covers one model line, with concise, non-technical information on key product features and installation suggestions. A large, cut-away illustration of the equipment is featured prominently as an aid for dealers when explaining operating features to consumers."

A total of ten brochures in this new format have been planned. Copies of the first four in the series, covering year-round air conditioning, gas furnaces, oil furnaces, and gas boilers, may be obtained from the Advertising Dept., Janitrol Heating & Air Conditioning Div., Surface Combustion Corp., Columbus 16, Ohio.

Design Handbook On Hot Water Heating

POMPTON PLAINS, N. J.—A 70-page design handbook, covering all aspects of zone control hot water baseboard heating for new homes, is being offered by Edwards Engineering Corp., 1 Alexander Ave., here.

Included are sections on construction, installation, dimensions, specifications, features, and photographs. Also included is a section on air conditioning.

'Identi-line' Chart Aids Gasket Service

CHICAGO—The "identi-line" key chart booklet, a new tool designed to save the serviceman's time in identifying and replacing refrigerator door gaskets, has been released by Jarrow Products, Inc. here.

Almost 1,000 different refrigerator models manufactured by Crosley, Frigidaire, General Electric, Gibson, Hotpoint, Philco, Servel, and Westinghouse are listed, showing the correct "identi-line" replacement gasket for each model, the firm said.

"Jarrow identi-line refrigerator door placement gaskets are identical to those supplied by the refrigerator maker," it was stated. "They need no measuring, no cutting, no notching, and no forming (except where original replacements are furnished in measured lengths only).

"These identi-line gaskets are available to the serviceman through his wholesaler."

Copies of the new booklet are now in wholesalers' hands, according to Jarrow.

Bulletin on Boilers

READING, Pa.—Orr & Sembower, Inc., here offers a four-page bulletin describing "Power-Pak" packaged automatic boilers in the 15 to 25 hp. range.

Spec Sheet on Valves

CLEVELAND—Mor-Flo Heater Corp., 2176 E. 76th St., Cleveland 3, announced availability of a specifications sheet covering the line of temperature and pressure relief valves it is now manufacturing.

Data Sheet Issued On 'Spotaire LRC'

LOS ANGELES—A sales and engineering data sheet on "Spotaire LRC" individual-room air conditioners is available from Drayer-Hanson, 3301 Medford St., Los Angeles 63.

Purchaser now has 3-way option for use as (1) basic unit for concealed application; (2) basic unit with plenum accessory; (3) cabinet model.

The data sheet adds specification and capacity data for the newest addition to this line—a 300 c.f.m. unit, which bolsters the established 200, 400, and 600 nominal capacity units.

In addition, it highlights a new Drayer-Hanson development, a "cost cutter" plenum unit, which is described as a positive duct connection for remotely-installed Spotaire LRC basic fan-coil unit.

Keeps beverages colder on hot days...installs quickly... performs perfectly!

OFFERS BIG CUSTOMER ADVANTAGES: Dial adjusted cut-out settings on the Ranco Model A12-1506 Replacement Control for beverage coolers *keep inside temperature at desired level, regardless of outside temperature fluctuations.* Variable cut-out settings range from 9° to 22° F. Other advantages include manual OFF position on the dial knob, and constant cut-in (factory setting) of 38° F.

SPECIFY RANCO CONTROLS for *all* your refrigeration, air conditioning and appliance needs. Your Ranco wholesaler can give immediate delivery on the most commonly used Ranco models—fast, dependable service on "special" orders. He'll be happy to help you. Why not check with him today!

Ranco Model A12-1506
Exact Replacement Control For Beverage Coolers, UL Approved.

Get this handy Ranco Reference Manual

No. 1660 lists nearly 5000 Ranco Replacement Control applications, most complete line in the industry. Buy your copy from your Ranco Wholesaler. (Not available from factory.)

Ranco® INCORPORATED
COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS

Farm Electric Sales Book In New Edition

NEW YORK CITY—A new 66-page Farm Electric Sales Handbook has been published by the Farm Group of Edison Electric Institute.

Subjects covered by the handbook include electric dairy equipment, and egg cooling and storage. Each section outlines the principal advantages of the electric equipment discussed and gives such information as size of equipment needed for the various uses, capacities, operating costs, installation costs, initial investment costs, and average kilowatthour use.

The book also contains a number of useful tables and other information. Copies of the handbook may be obtained from the Sales Div. of Edison Electric Institute, 750 Third Ave., New York 17, N. Y., at $3.50 per copy, plus postage.

Pocket Manual On Heating Reissued

WEST HARTFORD, Conn.—Out of print for several years, the Dunham-Bush "Pocket Manual on Heating" is on the scene once more.

A recent reprinting of the manual makes it available to many whose orders had been turned down due to former "sell-outs," the company indicated.

The price is $1 per copy. The manual can be obtained from Dunham-Bush, Inc., West Hartford 10, Conn. Order forms are available at all Dunham-Bush district offices. Checks must accompany all orders.

The engineer-edited Pocket Manual includes sections on wet heating systems, radiation, unit heaters, pumps, specialties, control equipment, engineered radiation, blower unit heaters, special purpose pumps, engineering data, and terminology.

Acme Tells of System Engineered Components

JACKSON, Mich.—A new eight-page bulletin, Catalog No. 300B, has been made available by Acme Industries, Inc., 600 N. Mechanic St., here, to describe its system-engineered components.

ARI Conference Speakers--

(Concluded from Page 1, Col. 3)

retailing and into home equipment, and assurance to the manufacturers, many of whom will be displaying equipment at the 11th Exposition, of the food industry's desire to cooperate in letting them know what is needed.

• Arthur S. Goldman, market research director of *House & Home* magazine, whose field of discussion will be the market for residential air conditioning, and suggestions as to how this market may be developed by the industry. *House & Home* has studied the residential air conditioning field in many ways, and Goldman's presentation is expected to discuss the results of its studies in this area.

• Joseph Rorick, assitant for planning and construction, International Business Machines Corp., who will speak as the representative of a large industrial user of air conditioning. In addition to the fact that IBM utilizes air conditioned factory space, many of its products require controlled conditions of temperature and humidity for their operation, another phase to be touched on by the speaker.

• H. E. Ziel, an associate of Albert Kahn Associated Architects & Engineers, Inc., of Detroit, a firm which has planned, designed, and guided the installation of many industrial and commercial air conditioning systems throughout the country. Ziel will speak on the many factors that must go into the determination of system types for given specific non-residential applications, planning phases, and the reasons why industrial plants decide on air conditioning their work spaces.

Expect Speaker from Defense Department

In addition, it is expected that a speaker from the Defense Department will speak on the many defense activities which would be impossible, or at least extremely difficult, without mechanical cooling.

Rudy Berg, president of Air-Conditioning & Refrigeration Institute, which sponsors the 11th Exposition as well as the conference, commented:

"We feel that these outstanding speakers and their topics, embracing most current applications of the refrigeration cycle and looking to future uses, will provide a meaty session of vital interest not only to people in our own industry but to consulting engineers, architects, builders, contractors, and users and potential users of equipment designed to provide controlled temperature and humidity."

Conference Session Set for Nov. 3

The conference session will be held at 9:30 a.m., Tuesday, Nov. 3, on the stage at Atlantic City's Convention Hall, and will be presided over by R. K. Serfass, vice president of ARI, chairman of its Planning Committee, and chairman of the committee which set up the conference session as an "added attraction" for the 11th Exposition.

The Exposition will open at noon on Monday, Nov. 2, for a four-day stand at the Convention Hall, with exhibits by more than 175 companies manufacturing equipment, supplies, components, parts, accessories, and other materials used in connection with or allied with refrigeration and air conditioning.

The show will be preceded on Nov. 1 by a meeting of the membership of ARI.

Also meeting in Atlantic City at the time of the show will be Air-Conditioning & Refrigeration Wholesalers, National Commercial Refrigerator Sales Association, and Refrigeration Service Engineers Society.

There is no charge for admission to the show or conference.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

22nd Annual RSES Convention--

(Concluded from Page 1, Col. 4)

are scheduled for Saturday, Sunday, and Monday mornings. These sessions, as well as the entire educational program, will be under the direction of John H. Spence, national service manager, Hussmann Refrigeration, Inc., and director, RSES Educational Dept.

Social activities will feature a "Surprise Party" on Saturday evening, Oct. 31, and the annual banquent and entertainment on Sunday evening when the officers-elect will be formally installed.

Educational Program Speakers Listed

The advance educational program lists these speakers and topics:

Friday afternoon, Oct. 30—"Servicing Ice Cream and Milk Shake Dispensing Freezers," James H. Goodman, customer service manager, Sweden Freezer Mfg. Co.

Saturday morning, Oct. 31—"Prophecies and Profits," R. L. Eggert, Jr., general manager and secretary, R. L. Eggert Co., East Orange, N. J.; "Recent Advances In Hydronic Heating and Cooling," J. W. Hall, manager of field promotion, National-U.S. Radiator Corp.

Saturday afternoon, Oct. 31—"What Price—Nice Ice," W. A. LaGrange, manager, automatic ice machine, development engineering, Carrier Corp.; "Automotive Air Conditioning," Willis Stafford, manager, sales promotion-advertising, Detroit Controls Div., American-Standard; "Water Chillers and Their Controls," R. A. Wilkens, service manager, Acme Industries, Inc.

Sunday afternoon, Nov. 1—"Oil Migration In R-12 and R-22 Systems," Norman Sharpe, Air Conditioning Engineering Dept., California State Polytechnic College; "Food Store Air-Cooled Condensing Room Design," Don Friedman, chief engineer, Hussmann Refrigerator Co.; "Contaminating Gases In Refrigeration Systems," Dr. Walter O. Walker, dean, Division of Research and Industry, University of Miami.

Monday morning, Nov. 2—"Design, Application, Installation, and Servicing of Large Compressors with Mechanical Unloaders," M. M. Lawler, manager, advanced product sales, Worthington Corp.; "Thermoelectric Refrigeration — Past, Present, and Future," Royal S. Buchanan, manager, Advance Development Section, Refrigerator-Freezer Engineering Dept., Electric Appliance Div., Westinghouse Electric Corp.

BEFORE YOU BUY, THINK:

Will fungus attack your cooling tower 2 years from now?

Not if it's a Halstead & Mitchell cooling tower with a 20-Year Guarantee

The specially treated wood decking in H&M towers resists rotting, fungus attack and algae which accumulates and obstructs air flow in most other towers. Performance remains "like new" in H&M cooling towers year after year.

Only Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or fungus attack.

Other H&M features for unusually low maintenance include permanently sealed fan bearings, and a heavy gauge steel cabinet protected against corrosion by three plastic coats applied *after assembly*. Be sure. Ask your local wholesaler for H & M towers, or write to Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

H & M COOLING TOWER WITH PRESSURE TREATED DECKING

HM Halstead & Mitchell

Water-Cooled Condensers • Cooling Towers • Air-Cooled Condensers • Finned Coil Products

Men on the Move . . .

The Trane Co.—CHARLES E. WARREN has been promoted from salesman to manager of the Salt Lake City office. J. R. PATTERSON has been named manager of the sales office in Dayton. He has served in the Indianapolis sales office since 1955. WILLIAM L. BAKER, JR. has joined the Chicago sales office as a sales specialist on packaged air conditioning and heating products. He has had eight years' experience in the air conditioning field.

United Wire & Supply Corp.—EDWARD J. D'AMORE has been appointed service sales manager for the Brazing & Wire Divs. He was formerly in the sales department.

General Chemical Div., Allied Chemical Corp.—M. E. PACKMAN has been appointed consultant at the research laboratory in Morristown, N. J. to coordinate the division's extensive refrigerant development program. He was formerly process engineer at the Camden, N. J. works. STEPHEN J. MULLER has been named assistant sales manager of the Chicago office. He has served in the executive sales and heavy chemicals sales departments.

Dunham-Bush, Inc.—WALLACE G. HAMILTON has been named an application engineer in the Minneapolis district office. WILLIAM G. SMITH was appointed a sales engineer handling D-B cooling, Brunner, and Heat-X products in the St. Louis territory. ROBERT McCULLOCH has been appointed a sales engineer working out of the New York City office.

Admiral Corp.—HOWARD L. RENDELMAN has been promoted to regional sales manager covering distributors in Cleveland, Toledo, Buffalo, Youngstown, and Hazleton (Pa.). He has been sales manager of the company's Washington, D. C. distributing branch.

Westinghouse Electric Corp.—H. J. RUDISAILE has been appointed electric heating specialist in the Chicago area for the air conditioning division. He was formerly owner of an electrical wholesale and hardware supply business in Marshfield, Wis. REESE MILLS, the first manager of the electric range department, has retired after more than 40 years' service with Westinghouse.

Buffalo Forge Co.—BERT W. WHITMAN has been named manager of a new sales district in northeastern Pennsylvania, with headquarters in Allentown. He has been in the Buffalo sales district for seven years.

Drayer-Hanson, Div. of National-U. S. Radiator Corp.—THOMAS E. MATHISON has joined the company to supervise the catalog publications section. He was formerly with Ensign Carburetor Co., Fullerton, Calif.

Sundstrand Hydraulics, Div. of Sundstrand Corp.—JOHN F. GRIFFEY, serving the eastern territory for the last four years, is returning to the division headquarters to work as a sales engineer in the Midwest. JAMES R. HOLMIN, currently at the Rockford headquarters, is being assigned to sales engineering responsibilities in the East. RAY W. KIEFER has been appointed office service manager.

Controls Co. of America—H. B. WILGUS was named general sales manager for automotive and air conditioning sales.

Furnas Electric Co.—ROBERT W. CHAPMAN, Charlotte, N. C., has been appointed sales representative in North and South Carolina. He was formerly regional sales manager for A. O. Smith Corp.'s Electric Motor Div. JOSEPH H. FALLON, Cincinnati, has been named southern Ohio and northern Kentucky sales representative. He has been Cincinnati district manager for Sterling Electric Motors, Inc. for over five years.

Flexonics Corp.—Promotion of ROBERT F. FORD to sales manager of the Boston district has been announced. He joined Flexonics in 1955 as a senior sales engineer.

Minneapolis-Honeywell Regulator Co.—DR. FINN J. LARSEN has been named to the newly-created post of vice president in charge of research. He has been director of research since 1953.

Aurora Pump Div., The New York Air Brake Co.—JOHN M. BALS has been appointed general manager. He has been sales manager. Bals succeeds FRANK S. MAIN, who, due to health reasons, relinquished his post. Main will continue to serve the company in an advisory capacity.

National-U. S. Radiator Corp.—ZYGMUND A. GONGLEWSKI has been appointed personnel and industrial relation assistant. He was previously affiliated with Crane Co. as supervisor of employe and community relations programs. CLARK R. STERLING has been named salesman in the Chicago office of Pacific Steel Boiler Div. He was formerly associated with F. W. Helikson, Inc., as a manufacturer's representative.

Duro-Dyne Corp.—F. A. "BUD" JOHNSON, formerly general manager with David Levow of New York, has joined Duro-Dyne as assistant to the president.

Arkansas Power & Light Co.—DEWEY DOSSETT has been appointed an air conditioning advisor to architects, consulting engineers, industry representatives, and air conditioning and heating contractors. He was formerly district sales manager of Arkla Air Conditioning Corp.

Kelvinator Div., American Motors Corp.—WILLIAM E. REDDIG has been appointed director of styling. Since 1955, he has been assistant to the director of AM automotive styling.

The Johnson Furnace Co. (Cleveland)—FRANK J. RAU has joined the sales department. He was formerly in the sales department of Henry Furnace Co.

Trion, Inc.—WILLIAM P. UHLER has been named sales manager of the northeast-central region. He was formerly an air conditioning specialist with National-U. S. Radiator Corp.

Heating & Air Conditioning Div., The Coleman Co., Inc.—LESLIE L. WHITE has been named eastern zone manager of the national accounts department. For the past 12 years, he has been manager of the company's eastern branch in Philadelphia. ANTON (TONY) HUBERT succeeds White in that post. Hubert has served as regional sales manager for the northeastern and southeastern states.

Sporlan Valve Co.—JOHN L. ADAMS and DAVID F. SAHLER have been promoted to sales engineers in the Atlanta and Dallas field sales offices, respectively. They are former members of Sporlan's sales and engineering departments.

White-Rodgers Co.—JAMES R. HILLIN has been appointed sales engineer in the Atlanta field sales office. He will cover Georgia, Florida, and North and South Carolina. He has been a development engineer for Suburban Appliance Co.

Machinery & Systems Div., Carrier Corp.—JOHN F. KOOISTRA, western regional manager in Los Angeles, has been named to the new post of director of marketing services, with headquarters in Syracuse, N. Y. He will also administer the division's technical service departments. ROBERT C. WHITE, product sales manager in Syracuse, will succeed Kooistra in Los Angeles. A new position of marine coordinator will be filled by JORDAN E. PENGEL, business manager of the Marine Dept. in New York.

Grant Advertising, Inc.—HOMER A. (BEN) EASTMAN has been appointed account supervisor. Eastman, who will direct the agency's activities on the Chrysler Airtemp account, has been creative director of Sidney Clayton & Associates, Chicago, since 1957.

L. J. Wing Mfg. Co.—JOHN J. HAYES has been named New York sales manager. He has been a sales engineer in the New York branch office.

Kelvinator Research Chief Retires

DR. LAWRENCE A. PHILIPP (left), vice president in charge of appliance engineering and research, poses for a final picture with the "Polarsphere" refrigerator compressor which he developed, and with American Motors President George Romney and B. A. Chapman, executive vice president and general manager of Kelvinator. During his 32 years with Kelvinator, Dr. Philipp was issued 186 patents. His contributions to the advancement of product design and performance in the major appliance industry included the cold-clear-to-the-floor design by Kelvinator in 1948, which has since been adopted by most other manufacturers of electric refrigerators, according to the company. His retirement is effective Oct. 1.

Modine Mfg. Co.—EDWARD MILLS, formerly with the Herman Nelson Div. of American Air Filter Corp., has joined Modine as sales engineer for heating and ventilating units. DAVID W. LEMKE, formerly with Betz Div. of Bohn Aluminum & Brass Corp. as an application engineer, was named a sales engineer. PAUL MINSTER has become a junior partner in the Chicago firm of Staup & Harris Associates, Inc., which represents Modine heating and air conditioning equipment. He was formerly a representative in the Cleveland area for Schemenauer Mfg. Co.

Whirlpool Corp.—PAUL F. ARMBRUSTER, who has been on roving assignments as distributor development manager, was appointed southwestern regional manager. He succeeds BERNARD P. COLLINS, who has transferred to California as a district manager for the gas utility division.

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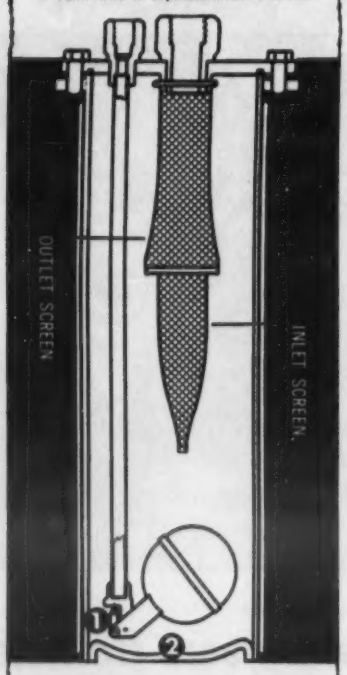

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Air Conditioning, Heating & Refrigeration News
450 W. Fort Street
Detroit 26, Michigan

TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

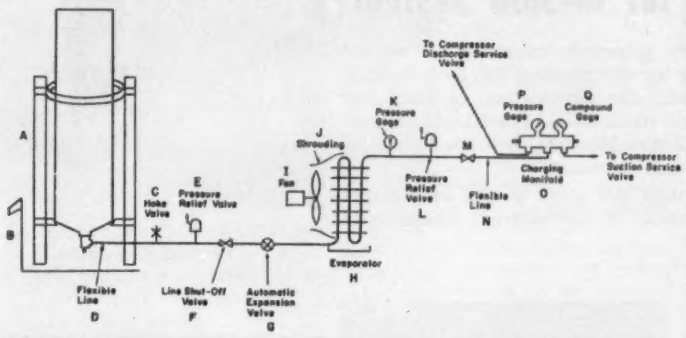

DIAGRAM illustrates practical and economic method of vapor charging systems. Note that heating cylinder is unnecessary because refrigerant is withdrawn as liquid. See text for key to diagram.

Handling Refrigerant Cylinders (2)

Heating cylinders in a safe and practical manner reflects good craftsmanship and is good practice from a business viewpoint. Packagers of disposable containers recommend placing pressure cans in a pan of warm water to promote discharging the entire content as vapor. Where two or three cans of refrigerant are required for charging or for makeup, manifolds are available which hold the cans in a bracket and pierce the outlet diaphragms. Refrigerant vapor from the cans is withdrawn from a common valve.

Charge as much refrigerant into a system as possible before attempting to warm the cans. Use water that has been warmed to about 110° F. or domestic hot water which has been tempered sufficiently to be handled comfortably.

You should be able to keep your hand in the water without experiencing discomfort.

A warm water bath can be used when withdrawing refrigerant vapor from 10 and 25-lb. cylinders. Observe the same general procedure as that recommended for disposable cans. However, the same method as outlined below for 145-lb. cylinders can be used for 10 and 25-lb. cylinders.

Diagram Illustrates Volume Charging With 145-Lb. Cylinder

Where a 145-lb. cylinder is to be used in a volume charging operation, the method illustrated in the diagram is suggested as a practical and economic means of vapor charging systems. Note that heating the cylinder is unnecessary because refrigerant is withdrawn as liquid. The liquid is then vaporized external to the cylinder and vapor is supplied in volume at the system charging connection. Cylinder pressure and vapor pressure at the charging connection remain constant in a uniform ambient temperature.

The cylinder is mounted in the inverted position in a specially designed stand (A). Liquid is withdrawn from the cylinder through a flexible charging line (D) and connecting copper tubing and expanded through an automatic expansion valve (G). Vaporization of the liquid takes place in a conventional evaporator (H). Heat is supplied by forcing warm, ambient air over the evaporator. Ambient air at a temperature of 70° F. or higher is a good heat source. The automatic expansion valve is operated by evaporator pressure and modulates liquid refrigerant flow until pressure at the valve outlet is a maximum of 50 p.s.i.g. As long as heat is available to the evaporator at a temperature above 55° F. (52 p.s.i.g.) liquid will vaporize and maintain pressure for good valve control.

The Hoke valve (C) is installed for purging the charging hose (D) when a cylinder is connected to the system. Shut-off valve (F) isolates the system when replacing an empty cylinder with a full one. The relief valve (E) protects the charging hose and piping between cylinder valve and shut-off valve (F) in case both valves are closed and liquid is trapped between them.

Pressure gauge (K) indicates the vapor charging pressure. Shut-off valve (M) is used to isolate the system from the charging manifold. A relief valve (L) protects the evaporator and evaporator piping against the possibility of high pressure in case valve (F) and valve (M) are closed and the evaporator (H) is full of liquid because of some unusual circumstance.

By observing the compound gauge (Q) on the charging manifold and pressure gauge (K) a 10 to 15 p.s.i. differential charging pressure can be maintained. Pressure gauge (P) on the charging manifold indicates the air conditioner compressor discharge pressure. This gauge should be observed for any unusual high pressure that would indicate that the air conditioner condenser is filling with liquid.

The evaporator fan must operate when liquid refrigerant is being withdrawn from the cylinder. No provision is made for automatic fan operation so the operator is responsible for closing the fan switch before charging an air conditioner system.

CONTROLS AND THE HEAT PUMP

A look at the performance and reliability of reversing valves and defrost controls, often called the heart of the heat pump.

The complete story in the Sept. 21 Heat Pump Issue

B. T. Service Manager Insists Basic Tools Will Suffice

B. T., the national service manager who has some doubts about the effect of placing instruments in the hands of servicemen, here replies to a previous letter by Tom Pendergast, who reacted to B.T.'s original statement which accompanied the July 27 Techcenter.

* * *

Dear Frank:

I note in the August 10th issue you have published Tom Pendergast's letter on your article "Instruments for Servicemen: Yes or No."

The point I tried to get across is that complicated instruments are no substitute for experience or common sense, and, placed in the hands of inexperienced service men, usually result in erroneous conclusions. You certainly don't place a kit of surgical instruments and an instruction book in the hands of a novice and tell him that he is a surgeon.

Certain basic instruments and tools are vital to a good service man. Give him those and he can solve 98% of the jobs. Give the complicated instruments to a novice and he will only be confused. I doubt whether the 2% a good service man misses would justify the cost of elaborate instruments.

In most service jobs, degree is of no importance. If a job is short of air the exact amount is of no importance. The problem is to increase the air quantity until the job performs properly. If a compressor will not run when proper voltage is applied through a test cord or known good accessories, it is of no importance whether the windings are open or shorted. In either case the compressor must be changed.

A very high percentage of capacitor trouble is due to an internal open or short. A very simple test will determine which, and a screwdriver can be used to good advantage in making this test.

Please don't lead your readers to believe that a truckful of instruments is the answer to a service man's prayer. Knowledge and common sense are still vital, and the more of both he has the more he realizes that a large assortment of complicated instruments is unnecessary.

I'm sure that Mr. Pendergast's analyzer can be used to advantage, but, personally, I don't feel that its place is in the service man's truck.

B. T., Service Manager
Company Name Withheld

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See for yourself the many advantages which Binks cooling towers have to offer . . . in selection, in erection economy, in trouble-free service. Ask your Binks Branch Office for a copy of Bulletin 477-A and 333. Or, write direct. No obligation.

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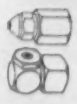

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CTI Moves Offices To Houston, Texas

HOUSTON, Texas — Karl E. Johnson, president of the Cooling Tower Institute, has announced the transfer of the association offices from Palo Alto, Calif. to Houston.

Operation of the CTI programs will continue in the broad areas of research and in the publication of industry standards under the direction of James L. Willa, CTI manager, with offices at 1120 West 43rd St., Houston 18, Texas.

Willa is taking over the administrative operation of this association of major manufacturers of industrial water-cooling towers after eight years in the capacity of field engineer for the national group, it was stated.

In addition to industry standards on acceptance test procedure, redwood lumber specifications and design data, nomenclature and wood maintenance, CTI has recently published new standards on Douglas fir lumber specifications and design data, pressure preservative treatment of cooling tower lumber, recirculation and application of recirculation factors, and gear speed reducers, all of which are available from CTI at nominal cost, according to the association's announcement.

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UNITED

Composition Ducts Claimed To Offer Many Advantages for In-Slab System

Perimeter duct systems are generally conceded to be one of the best approaches to proper air distribution for both heating and cooling a residence, especially the single-story on-slab type of house construction. While not limited to in-slab applications, "Transite" duct produced by Johns-Manville is claimed to be particularly well adapted for such systems.

The picture story below brings out some of the advantages claimed for the product as well as the manufacturer's suggestions for working with the material.

FIG. 1—Among the advantages claimed for Transite duct, an asbestos-cement product, is that it needs no special care and thus can be stored on site without regard to weather.

FIG. 4—Another way of mounting diffusers, as in this perimeter loop system, is to attach to top of duct after opening is chiseled out.

FIG. 7—Cutting Transite duct into required lengths in the field is no problem, says the manufacturer. A snap-type cutter, as shown here, is one way.

FIG. 8—A portable power saw fitted with an abrasive cutting wheel provides a quick, clean cut.

FIG. 2—How ducts are connected to plenum in a radial type perimeter system.

FIG. 5—Butt joints in ducts can be readily made by applying a special pressure-sensitive tape which is resistant to corrosion.

FIG. 9—On large projects a stationary power saw might be employed for cutting ducts. Note roller skate to simplify rotating of duct.

FIG. 3—Diffusers can be simply connected to Transite duct by the butt joint shown.

FIG. 6—Joints in ducts can be made in other ways, too, such as wrapping a metal band around the outside or using an internal sleeve as pictured here.

FIG. 10—One of the final steps in constructing a slab type perimeter system is—pouring the slab. A diffuser outlet is in the foreground.

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Belgian Demonstrates Selling Technique For Kelvinator General Manager

C'EST MAGNIFIQUE, the salesman tells the refrigerator customer in Belgium. Marcel Meurice, star salesman for Etablissements De-Haes, Kelvinator distributor in Belgium, demonstrates his selling technique for B. A. Chapman (right), executive vice president and general manager of the Kelvinator appliance division of American Motors Corp. Meurice visited AM's Detroit headquarters during a three-month trailer tour of the United States with Madame Meurice (left).

General Controls Purchases British Manufacturing Firm

GLENDALE, Calif — General Controls Co. has purchased Wirepots, Ltd., a British manufacturer of precision potentiometers and dials.

William A. Ray, General Controls' president, said the new subsidiary will be known as "General Controls, Ltd., an English Corporation." It is located at 13/15 Bowlers Croft, Honywood Rd., Basildon, Essex, England.

Ray also revealed that production of the parent company's entire line of precision potentiometers is being shifted to the British factory. They have been manufactured in the firm's Electronic Controls Div. plant in Burbank, Calif.

New items and additions to the present potentiometer line will not be transferred until testing on the U.S. market is completed for each product, according to the official.

"We also intend, as import quota problems are resolved," Ray said, "to expand this operation to include the distribution and/or manufacturing of other General Controls products in England."

General Controls recently announced the formation of its International Div. designed to supervise and coordinate its overseas expansion and production activities, which now includes the English corporation. Remy H. Ludwig, international business executive, is the director of the division headquartered in General Controls' home offices here.

Refrigeration, Cooling Gain Rapidly In Germany

MAINZ - KOSTHEIM, West Germany—As the German public's awareness of the advantages of refrigeration expands, the volume of refrigeration and air conditioning products sold increases, asserts an official of Gesellschaft fuer Linde's Eismaschinen A.G. here.

The firm manufactures a modern design room air conditioner, chest and upright freezers, and domestic refrigerators.

Outlook is optimistic, the official reports, as even moderate saturation of the refrigeration and cooling market has not yet been attained.

Robertshaw-Fulton Plans Italian Output

RICHMOND, Va. — A new plant for the manufacture of automatic control devices for the European common market will be built near Turin (Torino), Italy, by a newly-formed subsidiary of Robertshaw-Fulton Controls Co., T. T. Arden, president, announced.

The subsidiary, known at Robertshaw-Italia S.p.A., is owned jointly by Robertshaw-Fulton Co. and Societa Italiana per il Gas, the company serving gas fuel to most of Italy in the form of city and natural gas and as "bottled gas" to rural areas.

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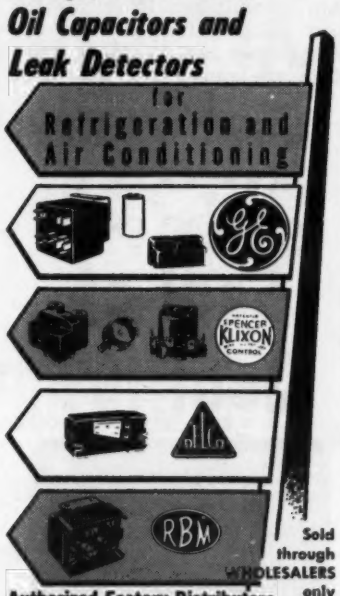

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Glen Alden Offers Scholarships for Foreign Students

NEW YORK CITY — First completely unrestricted foreign student fellowship program ever awarded in the United States has been donated to the New School for Social Research here by the Glen Alden Corp., parent of the Mathes Co.

To be known as the Albert A. List Fellowships, they provide for grants of $3,000 a year to five students to defray board, maintenance, tuition, and some travel in the New York area.

The fellowships are designed to enable qualified foreign students and specialists to obtain advanced training in their fields without financial worry. The program runs for five years.

Five foreign students will receive grants for study beginning this fall. No geographic or academic restrictions have been placed on the fellowships, according to Dr. Hans Simons, president of the New School.

Albert A. List is president and chairman of the board of Glen Alden Corp.

'Coleman-Europe' To Begin Operations In Early January

WICHITA, Kan.—A new division of the Coleman Co., Inc., to be known as "Coleman-Europe" will begin operations about Jan. 1, 1960, it was announced by Sheldon Coleman, president and board chairman.

All Coleman manufacturing, distributing, and administrative operations in Europe will be centered in the new division.

R. B. Spiro, currently vice president of the Coleman International division with offices in Toronto, has been named director general of the firm's new division.

Spiro will resign as vice president but will remain a director of the Coleman Lamp & Stove Co., Ltd., Toronto, Ont., Can. He will assume his duties Jan. 1 at which time he will take up residence in Europe.

With the creation of Coleman-Europe, Cecil F. Terrell will take charge of all business acticities of the Coleman companies outside of the United States, Canada, and Europe.

Terrell joined the Canadian company in 1936. He became a member of the export department during World War II.

Export offices of the company will remain in Toronto as a part of the Coleman Lamp & Stove Co., Ltd., according to the announcement.

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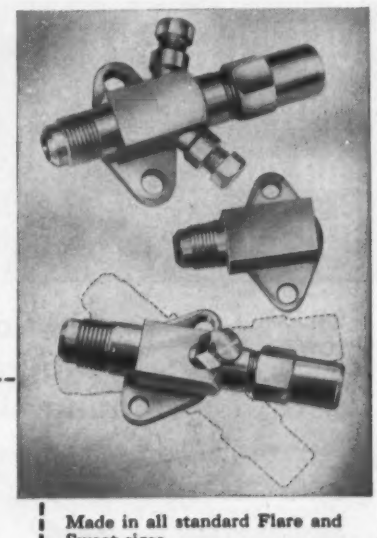

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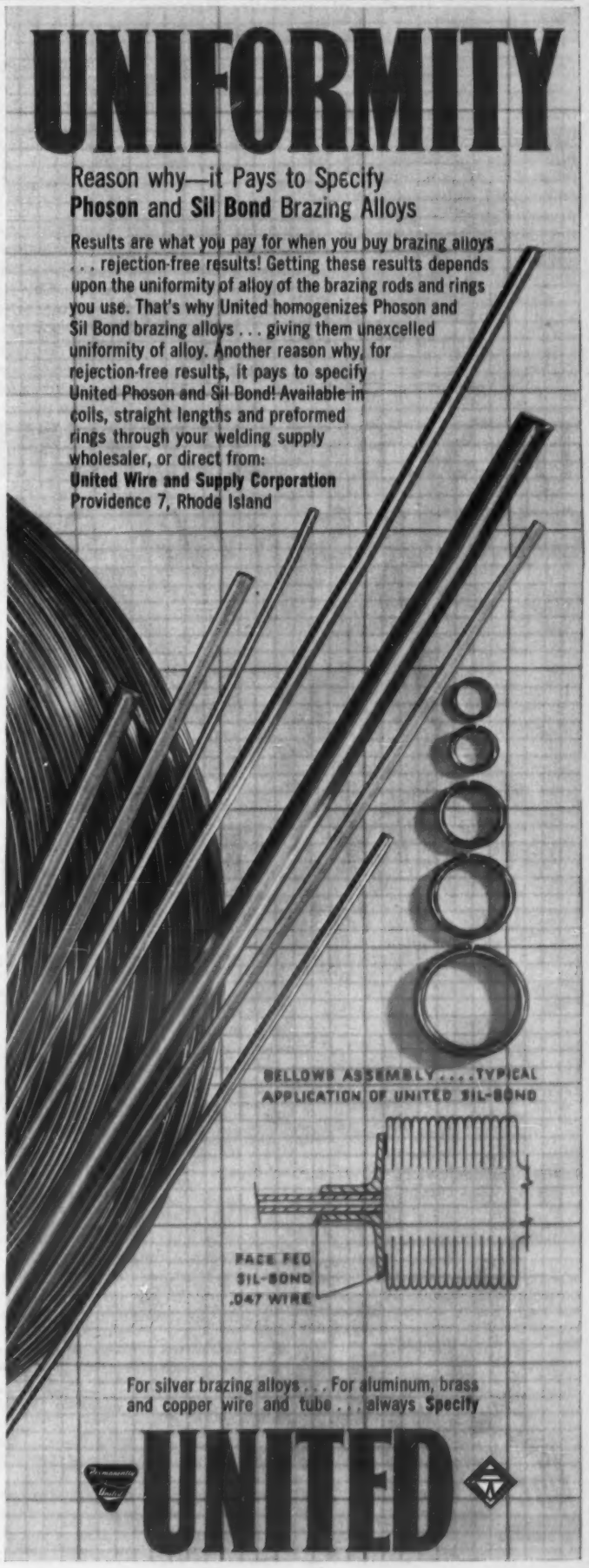

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UNITED

Heat Rejection (2)

Important Factors In Maintaining Proper Condensing Temperatures Outlined

Maintaining proper condensing temperatures is one of the most important factors involved in the satisfactory performance of a mechanical refrigeration system.

In this discussion of "Heat Rejection" originally presented at the California Association RSES Workshop at California State Polytechnic college earlier this year, Harold Halls has done an outstanding job of presenting in concise form information on the vital elements in the condensing side of the cycle, primarily:

(1) Sources of heat to be rejected; (2) effect of high or low condensing pressures; (3) types of condensers and factors in selecting them. Part 1 appeared in the Sept. 7 issue of the NEWS.

By Harold A. Halls, Manager
Recold Corp. Refrigeration Products

Summary

1. Excessively high condensing temperature causes:

(a) Reduced compressor capacity

(b) High discharge temperatures

2. Too low condensing temperature causes:

(a) Flash gas in the liquid line

(b) Possible partial starving of the evaporator

3. The quantity of heat to be rejected, per unit of refrigeration, is not the same for all applications.

4. The selection of a condenser must result from careful consideration of all factors.

5. Closely controlled condensing conditions will result in:

(a) Less service on all system components

(b) Proper refrigeration the year around

(c) Satisfied customers

LIQUID SUB-COOLING

When pressure is reduced over a liquid refrigerant, its temperature cannot remain higher than its saturated temperature. If the liquid can be sufficiently sub-cooled to offset pressure drop, a "solid" bank of liquid will be fed to the expansion valve. However, whether the liquid is sub-cooled or not, it will reach the expansion valve at a temperature in keeping with the reduced pressure.

If sufficient sub-cooling does not occur, part of the liquid must evaporate in order to cool the remaining liquid and "flash gas" results (bubbles in the sight-glass), possibly starving the evaporator. Chart No. 3 shows the degree of sub-cooling necessary for R-12 and R-22 for a 10 p.s.i. and a 20 p.s.i. drop.

An interesting observation is that at normal condensing, 90° to 110°, comparatively little sub-cooling is needed. But if R-12 is allowed to condense at 60° and a 20 p.s.i. drop occurs, sub-cooling of nearly 20° is necessary. With a condenser on the roof, condensing at 60°, and the receiver in a warm basement, it would be quite difficult to sub-cool to 40° in order to avoid flash gas. The information on this chart can be confirmed by referring to pressure-temperature tables.

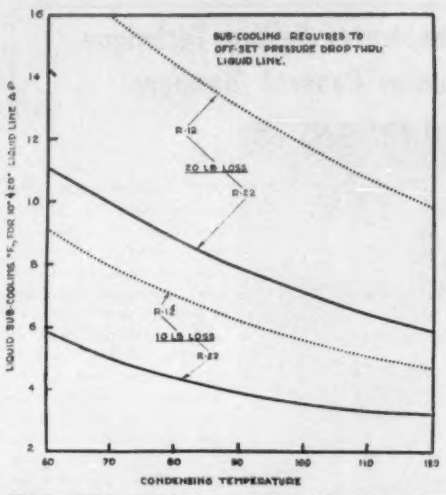

CHART 3 shows degree of sub-cooling for R-12 and R-22 for a 10 p.s.i. drop and 20 p.s.i. drop.

The foregoing examples emphasize the importance of determining the quantity of heat to be rejected and of maintaining, as close as possible, the condensing conditions for which the system components were selected. There are many other system effects resulting from changing condensing conditions that would justify separate discussions.

CONDENSING MEDIUMS

The most commonly used condensing mediums, for condensing refrigerants, are air and water; each of which can be properly applied to certain installations in certain areas.

AIR-COOLED

Air-cooled condensers are either of the chassis-mounted type or the remote type for larger installations.

Remote air-cooled condensers are usually installed outside of the machinery room with unlimited air available and with free discharge. Such condensers move approximately 1,000 c.f.m. per rated ton at 20° TD. In selecting remote air-cooled condensers, a consideration of the dry-bulb design temperature alone is not sufficient.

Stated dry-bulb design temperatures are those not exceeded more than 5% of the time. Extreme summer temperatures do exceed design by as much as 15° in some areas. It is important, therefore, that extreme conditions be considered — that is when the user depends on his refrigeration equipment.

Where chassis-mounted air-cooled condensers are installed in an enclosed area, outside air must be supplied in order to keep the air temperature at design conditions. Because the heat radiating from the motors, compressors and discharge lines is in the same area with the

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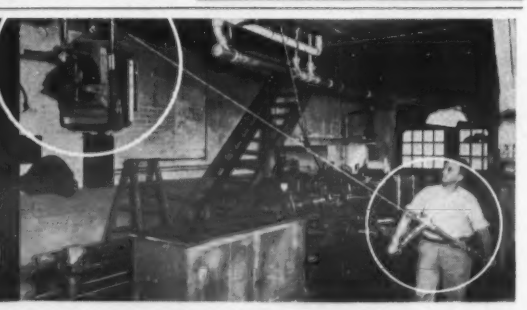

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condenser, more outside air, than that used with remote condensers, must be circulated. A "rule of thumb" calling for 1,200 c.f.m./hp., installed in the room, would be approximately correct.

WATER-COOLED

Water-cooled condensers can fall into three general types:

(1) Waste-water.
(2) Recirculated water — using a tower, and
(3) Evaporative condensers

Waste-water condensers have been widely used with compressors of from ½ to 5 hp.; however, water conservation necessary in many areas, or waste water disposal problems, is causing this type of condensing to be legislated out of use in many parts of the country.

This method, with the rate of water flow regulated by pressure responsive control valves, resulted in rather closely controlled condensing temperatures. However, in hard, or dirty, water areas, scaling in the water tubes caused frequent servicing.

HEAT PICK-UP BY WATER

The water, receiving heat from the refrigerant, warms through a temperature range. The quantity of heat picked up by the water is 1 B.t.u./lb./°F. change — this converted to B.t.u./hr./g.p.m. is 8.33 lbs./gal. × 60 min. × temperature change °F. Some usable equations are:

$$\text{(A)}\quad \frac{\text{B.t.u./hr.}}{500 \times \text{range}} = \text{g.p.m.}$$

$$\text{(B)}\quad \frac{\text{B.t.u./hr.}}{500 \times \text{g.p.m.}} = \text{range}$$

(C) G.p.m. × 500 × range = B.t.u./hr.

Assuming 15,000 B.t.u./ton, this would be

$$\frac{15{,}000 \text{ B.t.u.h.}}{500 \times 10^\circ} =$$

3 g.p.m./ton for a 10° range.

As pointed out earlier in this discussion, the rejection of 15,000 B.t.u./ton is accurate only under certain conditions and cannot be used for all conditions.

At -40° evaporating, 105° condensing, 18,000 B.t.u./ton must be rejected.

At -20° evaporating, 105° condensing, 16,800 B.t.u./ton must be rejected.

Where shell and tube water-cooled condensers are involved they must be selected on the basis of B.t.u. to be rejected, water temperature range, and g.p.m. to be circulated.

COOLING TOWERS

Towers to cool recirculating water have a long history of use. Here the water, while passing through the condenser, is performing the same function as in a waste-water installation. The purpose of the cooling tower is to cool the water so that it can be re-used. This is accomplished by breaking the water into fine particles—passing air through these particles —causing part of the water to evaporate, resulting in a reduction in temperature of the remaining water.

The amount of evaporation that takes place and the resulting cooling of the water is the result of the difference between the water temperature and the wet-bulb temperature of the air passing through the spray. This difference is called "approach" and refers to temperature difference between water leaving the tower and wet bulb.

From this we see that the tower is only a water cooler and its responsibility is confined to removing heat brought to it by the circulating water. Any malfunction of the water-cooled condenser, in releasing heat to the water, cannot be overcome in the tower.

In selecting cooling towers there is a total usable temperature difference represented by the difference between design wet bulb and the temperature of the water returning from the condenser to the tower. With water returning to the tower at 95° and a wet bulb of 76°, this usable TD is 19°. Part of this must be used as "approach" and the remainder as "range." If the condenser used can handle the heat load with an 8° water range, the tower can be selected on an 11° approach.

Water Returning to the Tower	95°
Cooling Range of Water	8°
Water Leaving the Tower	87°
Wet-Bulb Temperature	76°
Approach	11°

If the condenser must use a 10° water range, the approach would be 9°.

Water Returning to the Tower	95°
Cooling Water Range	10°
Water Leaving Tower	85°
Wet-Bulb Temperature	76°
Approach	9°

As wet-bulb temperatures fall below design, more evaporation and, consequently, greater cooling of the water will result. This would result in lower condensing temperatures which could cause system difficulties; however, because wet-bulb temperatures do not fluctuate as rapidly, or over as wide a range as do dry-bulb temperatures, the resulting condensing temperature changes will not be as severe as with air-cooled condensers.

If the tower is constructed in a manner that will accommodate modulating dampers, such fluctuations can be controlled. Modulating dampers, controlling the quantity of air passing through the tower, and responding to pan water temperature, will reduce the rate of evaporation and water cooling.

If dampers cannot be installed on the tower, pressure-sensitive water control valves can control the flow of water through the condenser and so control the condensing temperature.

EVAPORATIVE CONDENSERS

An evaporative condenser might be described as a combination of an air-cooled condenser and cooling tower. Here the high temperature refrigerant discharges into a tube bundle which is located in the spray chamber. Air is forced through the spray water and tube bundle causing evaporation — evaporation of part of the spray water is supported by heat from the refrigerant that is condensing in the tubes.

The capacity of an evaporative condenser is in relation to the difference between condensing and wet-bulb temperatures. The use of modulating air dampers can effectively control condensing temperatures through a wide range of wet-bulb temperatures. The tube bundles can be made into several independent circuits to serve several compressors.

EVAPORATIVE WATER COOLERS

The most recent development, especially adaptable to supermarkets or where many compressors and individual receivers are involved, is the use of what appears to be an evaporative condenser except that it is actually a water cooler. Here the water is passed through a tube bundle which is located in a spray chamber just as in an evaporative condenser. Evaporation of some of the spray water is supported by heat from the water in the tube bundle. This cooled water is circulated through water-cooled condensers, picks up heat and returns for re-cooling.

Two circulating pumps must be employed. One to circulate the spray water and the other to circulate the cooling water, which is in a sealed circuit, through the water-cooled condensers, then back through the tube bundle. The cooling water, in a sealed system, cannot carry sludge and scale forming materials to the condensers as with a cooling tower or a waste-water system; consequently, no scale is formed in the water-cooled condensers and as the water returning to the tube bundle is approximately 95°, no scale is baked onto the outside of the tube bundle.

Thus, the principal difficulty with waste water, cooling towers, or evaporative condensers is eliminated. The only cleaning necessary is to take care of the airborne contaminants that usually collect in the pan and which can be flushed away.

The capacity of an "evaporative water cooler" is the result of many complex factors, so should be selected from tables published by the manufacturer and stated for this type of application. Actual condensing temperatures can be controlled within a very narrow range by the use of water valves, responding to head pressure, and controlling the flow of water through the individual condensers or, by the use of modulating dampers, controlling the flow of air through the spray.

(The End)

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'Most Important' NEMA Meeting To Vote on Reorganization Plans

NEW YORK CITY—The National Electrical Manufacturers Association will hold the most important meeting in its history this year when representatives from NEMA's hundreds of member companies assemble at Atlantic City, N. J. the week of Nov. 8 to vote on plans to reorganize the 33-year-old association, it was announced by Joseph F. Miller, managing director.

Presentation of the reorganization plan will take place at an all-NEMA business meeting the afternoon of Nov. 11. The meeting will be preceded by a first-time combined luncheon of NEMA sections.

"This unusual event will find members of the association seated at their own section tables where they will be able to discuss and decide reorganization questions as units rather than as individuals," it was pointed out.

"The session will be historic as well as important, since it could very well lead to the beginning of a new era in NEMA operations, and to the start of annual conventions far different from the section-by-section type of meeting."

The convention will open on Monday, Nov. 9, and close Thursday afternoon, Nov. 12. Section and committee meetings will be held during the first two days.

PHCIB Plans Annual Membership Meeting In Chicago Oct. 1

CHICAGO — The Plumbing-Heating-Cooling Information Bureau's second annual membership meeting will be held at 4:15 the afternoon of Oct. 1 at the Palmer House in Chicago, according to Howard L. Spindler, president.

Spindler pointed out that this time and location were selected for the meeting because a large number of manufacturers, wholesalers, and others in the industry will be in Chicago for the 65th annual meeting of the Central Supply Association being held Oct. 1-3, also in the Palmer House.

Of high interest to the entire plumbing-heating-cooling industry will be a report on the progress of the bureau's initial sales training program.

The bureau's new board of directors will be elected at this time. The new directors will then meet in Atlantic City to elect the bureau's new officers and complete plans for the 1960 PHCIB program during the convention of the American Institute of Supply Associations, Oct. 25-28.

Heat Transfer Meeting Set for August, 1961 At U. of Colorado

NEW YORK CITY—An International Heat Transfer Conference will be held in the United States from Aug. 28 to Sept. 1, 1961, at the campus of the University of Colorado at Boulder, according to Dr. A. C. Mueller, chairman of the Conference Planning Committee.

The Conference will be held under the joint sponsorship of four engineering groups — The American Society of Mechanical Engineers, American Institute of Chemical Engineers, the Institution of Mechanical Engineers (Great Britain), and the Institution of Chemical Engineers (Great Britain).

Also participating in the conference are the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, American Chemical Society, American Nuclear Society, American Rocket Society, Chemical Institute of Canada, the Engineering Institute of Canada, the Institute of Aeronautical Sciences, and Society of Automotive Engineers.

Dr. Mueller stated that the conference was being held for the purpose of making known new fundamental knowledge and practical developments in the field of heat transfer and to bring together the persons engaged in research, development, and application for discussion and exchange of information.

Papers are desired on recent original work or new applications of theory to practice. Abstracts of papers offered for the conference should be sent to S. P. Kezios, Secretary, 1961 International Heat Transfer Conference Committee, c/o The American Society of Mechanical Engineers, 29 West 39th St., New York 18, New York, prior to Aug. 1, 1960.

WHAT . . WHEN . . WHERE

—A Guide to Coming Events of Interest

Refrigeration & Air Conditioning Contractors Association Convention
Sept. 27-30, Ambassador hotel, Los Angeles.

Midwest Association—Refrigeration Service Engineers Society Educational Conference
Oct. 1-3, Lafayette hotel, Little Rock, Ark.

American Gas Association Convention
Oct. 5-7, Conrad Hilton hotel, Chicago.

National Frozen Food Distributors Association Meeting
Oct. 25-28, Sherman hotel, Chicago.

Refrigeration Service Engineers Society Convention
Oct. 30-Nov. 2, Atlantic City, N. J.

Air-Conditioning & Refrigeration Institute Membership Meeting
Nov. 1, Haddon Hall, Atlantic City, N. J.

Air-Conditioning & Refrigeration Wholesalers Meeting
Nov. 1-2, Atlantic City, N. J.

National Commercial Refrigerator Sales Association Convention
Nov. 2-4, Traymore hotel, Atlantic City, N. J.

11th Exposition of the Air-Conditioning & Refrigeration Industry
Nov. 2-5, Convention Hall, Atlantic City, N. J.

National Hotel Exposition
Nov. 2-6, Coliseum, New York City.

National Electrical Manufacturers Association Meeting
Nov. 9-13, Traymore hotel, Atlantic City, N. J.

The Institute of Boiler & Radiator Manufacturers Meeting
Week of Nov. 9, Seaview Country Club, Absecon, N. J.

National Electric Power Conference
Nov. 18-20, Hotel Westward Ho, Phoenix, Ariz.

National Warm Air Heating & Air Conditioning Association Meeting and Convention
Dec. 1-4, Chase Park-Plaza hotel, St. Louis.

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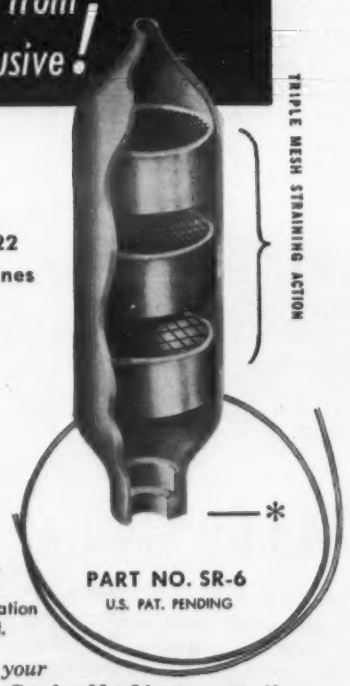

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Cold Weather Problems (7)

If the compressor is cold—colder than the evaporator—the refrigerant condenses from the evaporator, through the suction line, into the compressor. Some of it condenses in the cylinders themselves, and some is absorbed into the cold oil in the crankcase.

On many installations it is feasible to use a suction line solenoid that is closed during the idle cycle, to shut off the suction line and thus prevent refrigerant from condensing from the evaporator into the compressor.

On multiple installations having two or more refrigerators connecting to the same compressor, the use of suction line solenoids may prove to be a bit complicated and rather expensive, particularly if the refrigerators and their evaporators are held at different temperatures.

When the condensing unit in a cold room starts, the compressor crankcase and head, and the condenser, are cold, so condensation may continue for a short time until they warm up. For the rest of the running cycle, the unit is warm and there is no trouble until it cools down again shortly after the compressor stops.

Therefore, if we can just keep the unit warm during the idle cycle, we will not be apt to have any trouble and there will be no condensation of refrigerant into the compressor. Moreover, the oil, being warm, will not be able to absorb much refrigerant. Cold oil may absorb 50% or even more, of its weight, of refrigerant. Warm oil may be able to absorb only two or three per cent of refrigerant.

KEEP THE COMPRESSOR WARM

Instead of using a suction line solenoid, it may prove to be less expensive, more effective, and much simpler to either move the condensing unit into a warmer location or to supply enough heat to the cold basement room in which the condensing unit is located to keep out of trouble.

Many times, simply closing the outside doors or windows of the compressor room may be all that is necessary. Sometimes having a door or window open from the cold room to a furnace room may supply enough heat to keep the compressor warm enough to prevent condensation.

If the condensing unit cannot be moved to a warm enough location, or if the room in which the condensing unit is located cannot be kept warm enough (50° F. or above is usually warm enough), it may be feasible to build a small enclosure around the condensing unit.

This enclosure should have adjustable louvers on the air inlet and outlet sides. Ideally, the louvers should be motor operated and their position controlled by a thermostat in the enclosure, but this is rather expensive and not often possible from a cost standpoint.

SUPPLY ELECTRIC HEAT

In extreme cases, an electric light bulb of 75 or 100 watts may be put inside the enclosure. It can be kept lighted continuously, or by use of a normally closed relay actuated by the condensing unit motor circuit, it may be turned on during the idle cycle and off during the on cycle.

A serviceman can use his ingenuity to devise various means to keep the compressor warm during the idle cycle. One man reports that he used a 300 watt electric element from an old toaster. He wrapped it in asbestos and placed it under the compressor, and connected it by means of a relay so that the current was on the element only while the compressor motor operated.

An electric resistance wire known as "soil cable" can be wrapped around the compressor crankcase to keep the oil warm. It has rather high resistance, and if properly selected, can hold the compressor crankcase and the oil to about 120°, which is a very satisfactory temperature.

Some servicemen will recall that the early General Electric Monitor Top units had an electric element of about 15 watts in a tube in the oil of the crankcase. This element was accessible by removing the small nameplate. Its purpose was to keep the crankcase oil warm during the off cycle and thus prevent the refrigerant (SO_2) from condensing in the crankcase, and thus causing a tendency toward slugging at the start of the running cycle.

If the condensing unit in a cold location runs all or most of the time, or if the off cycles are of short duration, the unit may ordinarily keep itself—including the compressor oil—warm enough to prevent condensation of refrigerant into the compressor, and the warm oil will not absorb enough refrigerant to cause slugging.

One remedy is to cause the condensing unit to operate often—that is, not permit it to be idle very long at a time. This can be done by using a timer to start the unit every few minutes during the off cycle and run it enough to keep the compressor and oil warm.

If the unit starts to cool off, the head pressure starts to drop. This is taken advantage of by a control made by at least one manufacturer. It consists of a reverse acting pressure control whose bellows is connected to the condenser, and whose switch is connected in parallel with the thermostat or pressure control. In this manner, it can start and stop the compressor independently of the main control.

As the condensing unit cools, the condensing pressure starts to drop. The reverse acting control is set to start the unit when the condensing pressure is such as to indicate that the unit is no longer warm.

It then keeps the unit in operation until the condensing pressure is back up to normal operating pressure, at which time the condenser and compressor will be warm. Thus, this control operates the unit enough to keep itself warm, and uses the head pressure as an index and control means to assure that the unit stays warm.

This series of articles has attempted to show some of the causes and suggest some remedies in case the refrigerator or the condensing unit is in a cold location.

The best remedy lies in avoiding the cold location at the time of installation. It is often easier to prevent the trouble than to cure it after it has occurred. If your customer insists on a cold location for either refrigerator or unit, show him why he should let you choose a location sufficiently warm to avoid trouble. He probably doesn't realize the possibility of trouble and you can save him and yourself a considerable amount of trouble that could have been avoided.

(The End)

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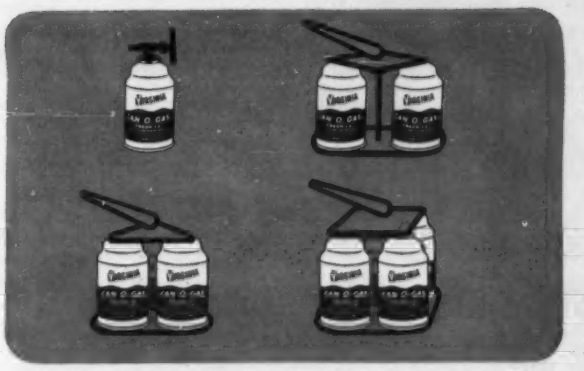

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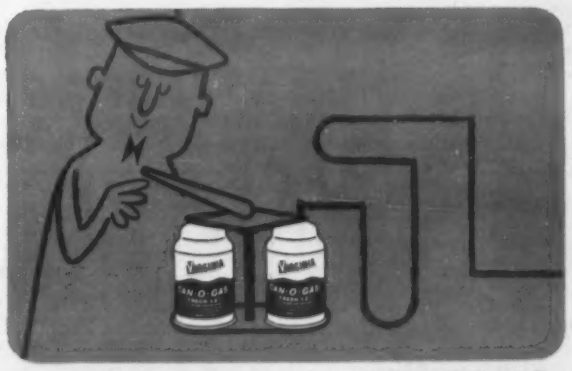

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Being a Good Supervisor

Dos and Don'ts of Good Personnel Management and 6 Basic Steps In Setting Up Training Program

MIAMI BEACH, Fla.—What it takes to be a good supervisor and what to avoid was outlined for members of the National Association of Practical Refrigerating Engineers here by Daniel M. Roop.

Roop is administrative engineer for Baptist Memorial hospital in Memphis, Tenn. and in charge of the hospital's resident engineer training program.

He also outlined the six basic steps to success in training.

Leadership, Roop declared, is merely the ability to get along with people. It requires 90% inspiration and 10% perspiration.

A good supervisor, he said, will praise his employes publicly and criticize them privately. He will gain an appreciation of their job problems and treat them as he would want to be treated himself.

Discipline, he said, requires both responsibility and authority. The man who exercises authority must also have the responsibility for his acts.

Be understanding, but not overly familiar with employes, he cautioned. Over familiarity will cause a loss of discipline and respect.

Get to know as much as you can about your employe. Show him how to overcome his problems, both professional and personal. Personal problems can interfere with professional efficiency, he noted.

Be aware of employes' problems, he said. You can become aware of them by keeping your ears open and your mouth shut. Then know what to do and when to do it.

Roop said the supervisor must have interest and enthusiasm not only for his own pet projects but also for the employes' pet projects.

Develop pride in your work, he suggested. If you have pride, you will get an improvement in employes' appearance and work.

"You are working for your employes as well as your employer," Roop declared. "Your job is to help them do a better job."

Unbalancing factors that undo effective leadership are:

1. Temper. The supervisor must learn to keep his temper when dealing with employes.

2. Making mistakes. Employes can help an admired supervisor overcome his mistakes—if he doesn't make them twice.

3. Monotony in the job. A sense of humor is a great asset in counteracting monotony.

4. Worry. Leave your problems at work. Don't take them home with you. By clearing them from your mind at night, you will find that you can look at them with a fresh slant in the morning.

5. Favoritism. You can't afford to show favoritism to any one employe. Must treat them all alike.

6. Procrastination. That is the biggest bugaboo of all. Don't put off doing things you don't like to do. Give others the service they expect whether you like it or not.

Roop offered these six basic steps to success in setting up and conducting a training program.

1. Define the problem. Determine what it is you want your training to accomplish. Then write it down.

2. Gather all the available material on the subject—literature, manuals, and the experience of others.

3. Analyze the course and the data.

a. Know your subject. Put yourself in the employe's place to determine how it might be most easily absorbed.

b. Check your own attitude.

c. Determine what benefits are to be derived from the services given.

4. Decide on the presentation of theory and practice. How much "why" and how much "how."

5. Sell your material to the employe. Tell him what it is you want him to do, what you expect to accomplish. Get the experienced employe who resists "learning" to adopt new ways without realizing it. Let him think the change was his own idea.

6. Observe the results. Study personal reactions to the training.

"Don't be afraid to revise your program," he advised. "If it doesn't work, change it."

Permanent training programs need to be changed periodically to keep up with new development and technological progress, he added.

What are the elements of "good management" for the air conditioning and refrigeration and heating dealer or contractor?

There are many elements that go into "good management" for this kind of a business, but it would seem that the three principal ones would be (1) the development of the kind of salespower that will develop enough sales volume to operate the company profitably and promote expansion; (2) proper control of expenditures and services to insure an adequate profit; (3) proper direction and handling of personnel to promote growth in the business and retention of good personnel.

In this series of articles the NEWS has drawn from a variety of sources to present some of the best current thinking on some specific elements that make for success.

North Carolina Exam Applicants Must File by Sept. 30

RALEIGH, N. C.—The North Carolina State Board of Refrigeration Examiners has announced that it will give an examination in Chapel Hill on Oct. 9 for persons who wish to take the examination to qualify for a contractor's license.

Persons planning to take this examination may secure an examination application form from the board's office in Raleigh. All applications must be received on or before Sept. 30.

Julius Air Conditioning Forms In Oklahoma City

OKLAHOMA CITY — Julius Air Conditioning Co., Inc., Oklahoma City, has been granted a charter. Capital stock is $50,000. Incorporators are Adrian E. Julius, Lucile Julius and Frank C. Swartzbaugh, Oklahoma City.

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KARLSON
Automatic
WATER CONDITIONER

This is the simplest and lowest cost method for eliminating the elements that clog and damage ice cubers and flakers, coffee makers and urns, cooling towers, evaporative condensers, etc.

KARLSONITE*, a water soluble complex phosphate in crystalline form, when automatically fed into the water supply, forms soluble complexes with calcium and magnesium, holds them in suspension and prevents precipitation of these elements. Deposits already formed are redissolved. Karlsonite* also forms inert complexes with iron, copper, nickel, manganese and zinc ions. It is harmless to all metals and prevents corrosion and pitting of metals in zeolite soft water. It is harmless to septic tanks—does not build up organic sludge.

Karlson Automatic Water Conditioner is easily installed, and requires no maintenance except infrequent renewal of the Karlsonite* charge.

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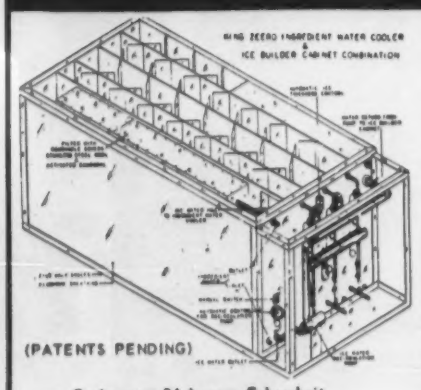
Phone or write . . .

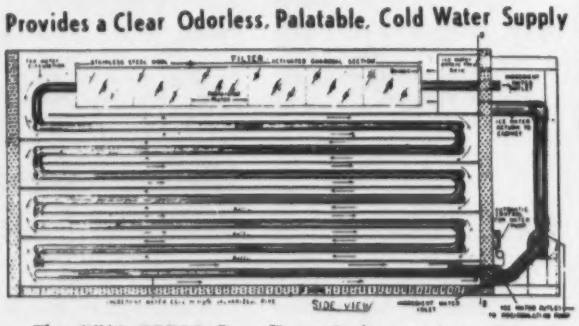
STILES-KARLSONITE CORPORATION
1552 Grand Avenue, Waukegan, Illinois
*Reg. U.S. Pat. Office
WATER CONDITIONING COMPOUNDS AND EQUIPMENT

For Ideal Filtered Ingredient Water at Low Cost



(PATENTS PENDING)

Choose "King Zeero's" NEW
PURE WATER COOLER
Provides a Clear Odorless, Palatable, Cold Water Supply



- Cools water 34 degrees Fahrenheit.
- Filter removes all silt, algae and chlorine from city or well water supply.
- Pure water is chilled by ice water -- *prevents freeze-ups.*
- The ideal water for ingredient and wash water applications -- food processing needs, butter or cheese wash, dough water, poultry or produce chilling.

Available in Cabinet or Vertical Styles.

The KING ZEERO Pure Water Cooler consists of a galvanized pipe water coil, a self contained efficient charcoal filter, a KING ZEERO Ice Builder and an ice water recirculation pump, with controls and necessary valves for flow and back wash, all contained in an integral unit.

Write for Bulletin PWC 59.

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Chicago 41, Ill.
Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks Pure Water Coolers

Send this LABEL from any 'SUPCO 88' Bottle

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REPAIR INFO KIT

- Relay Diagrams
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A BUNDLE of information that took years to compile is yours, FREE with your first purchase of "Supco 88" — THE MIRACLE OIL ADDITIVE FOR REFRIGERATION USE!

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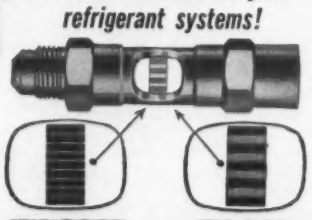
Simplest, most economical way to detect moisture in your refrigerant systems!

Positive Sealing
LIQUID EYE®
INDICATOR
featuring the built-in
MOISTURE-REACTOR



No more guesswork about the condition of your R-12 and R-22 refrigerant systems. No installation problems either.

Now you can get both in the same unit
...LOWEST COST MOISTURE REACTOR PROTECTION PLUS ALL THE PROVED LIQUID EYE FEATURES!

CONTACT YOUR WHOLESALER TODAY

IT'S GOOD

The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.

IT'S BAD

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

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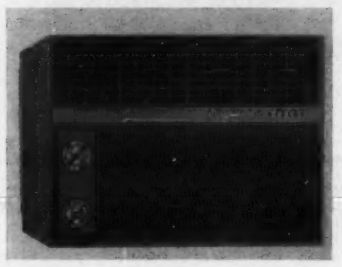
ALLIN MANUFACTURING CO.
410 NORTH HERMITAGE AVE. • CHICAGO 22, ILLINOIS

OVER 1,000,000 LIQUID EYES SOLD TO DATE!

ABOVE: Gibson Air Sweep model of the Economy Series.

BELOW: Suburban Series.



Gibson Line--

(Concluded from Page 1, Col. 5)

and 23 15/16 deep. The B-6212 is a 1-hp., 12-amp, 230-volt unit; the B-6222 a 2-hp., 12-amp, 230-volt model; and the B-6222R, a 2-hp. reverse cycle heat pump.

"Metropolitan" series is designed without side louvers for through-the-wall installation. It can also be mounted as a standard window unit. The series contains four straight air conditioning units and two reverse cycle models, all with 1-hp. compressors and fresh air exhaust.

The F-6171 is a 7.5-amp, 115-volt unit, the F-6111 a 12-amp, 115-volt unit, the F-6112, a 10-amp, 230-volt unit, and the F-6118 a 12-amp, 208-volt model. The reverse cycle models are the F-6111R, a 12-amp, 115-volt unit and the F-6112R a 12-amp, 230-volt unit.

Fifth series is the "Texan". Only unit is the model G-6222, a 2-hp. unit for "whole house" and small commercial cooling. It operates at 12 amps, 230 volts and measures 16 in. high, 28 in. wide, and 32 in. deep.

Dehumidifier Line

For 1960 Gibson will offer two dehumidifiers, the DH-2050 and DH-2051. Both will remove 1 pint of water per hour. They have a 1/3-hp. Gibson compressor, condenser with copper coils, three roller bearing castors, and a plastic drip trough with standard garden hose connection.

The DH-2051 also has an automatic humidistat that turns the unit on and off as air moisture increases or decreases and an 8-qt. plastic bucket.

Refrigerator-Freezer Will Include 10 Models

The refrigerator and refrigerator-freezer line will include 10 models. Five are two-door models, three with freezer on the bottom and two with freezer on top. Capacities range from 11-cu. ft. freezer and 9-cu. ft. refrigerator space to 14.34-cu. ft. gross capacity including 100-lb. freezer.

The five single door models include one without a freezer compartment, an automatic defrost model, two deluxe models with "Dial-A-matic" defrost, and an economy model, also with Dial-A-matic defrost.

The 1960 freezer line will consist of five upright models. The G-315 FO1 is claimed to be the only "Frost Clear" type designed and priced for the mass market (under $400 retail). It operates on a blast freezing principle similar to commercial freezing systems.

A new size in the Gibson line is the 18-cu. ft. G-318 F01. There are also a 10 and a 14-cu. ft. model with shelves and side plates formed from one continuous aluminum freezing plate and a 21.6-cu. ft. model with freezing coils in the all aluminum liner.

The 3,000 dealers, distributors, and salesmen attending this convention are doing so with all expenses paid by Gibson. They qualified for the five-day vacation through outstanding sales performance during 1959.

Next year, Gibson plans to air lift 5,000 top selling dealers to Hawaii by Pan American jet.

T-H Index--

(Concluded from Page 1, Col. 4)

being used by such organizations as Columbia university to determine whether classes should be dismissed in non-air conditioned rooms. He also commented:

"As time goes on and more people become aware of its value, homeowners will discover the T-HI of their homes will help them get more comfort when their heaters are on.

"Possibly 90% of all homes are too dry and therefore uncomfortable in months requiring heating. The addition of moisture can aid comfort.

"I would not be surprised if some gadget or instrument makers start manufacturing a device to do the job in the home."

The T-HI system was discontinued by the New York City Weather Bureau at the end of August, Christie explained, "because we always resume the use of degree-day reports Sept. 1 at the request of heating engineers.

"One report concerns heat and the other the possible need for it, so it did not seem advisable to run them both at once."

A spokesman for the Weather Bureau in Chicago said early this month that the T-HI was still in use there and would continue to be reported at any time when the index was 65 or higher, or when the temperature was 80° F. or higher.

Index reports were still being issued in New Orleans and, a spokesman for the Weather Bureau there said, "probably will continue right through the winter and into next year." The San Francisco Weather Bureau reportedly did not use the T-HI there because the summer months were cool to chilly.

Ebco Names Pierce Advertising Manager

COLUMBUS, Ohio—Elisha G. Pierce has been appointed advertising manager for The Ebco Mfg. Co., filling the vacancy created by the resignation of T. J. Spence to take another position.

Pierce was formerly assistant advertising manager of Ebco, manufacturer of "Oasis" and Kelvinator refrigeration appliances.

G-E Offers Promotional Tools To Help Boost Furnace Sales

TYLER, Texas—Several new promotional tools have been prepared by General Electric Co. to help its dealers increase sales of G-E furnaces.

In announcing availability of the material, C. B. Ramsdell, marketing manager for the company's central air conditioners, said G-E is "planning ahead aggressively with new promotions to get an even larger share of the lucrative furnace market."

The company is promoting its furnace line heavily even though its furnace manufacturing plant in Trenton, N. J., was hit by a strike.

First of the new dealer aids is a visual heating presentation. This eye-catching "sales closer" leads off with a full-color illustration of a "high-fashion" model posed with the G-E "Imperial" furnace, it was noted.

The 24-page presentation "sets out, in factual, easy-to-understand language, all the benefits and features of G-E gas and oil furnaces. It answers just about any question a prospective customer could ask. In addition, it explains the advantages of the exclusive G-E 'Air-Wall' system of air distribution, and shows how easily whole-house air conditioning can be added."

Ramsdell stressed that the presentation is not meant to be a "canned pitch" but rather, to supplement the dealer's regular sales story.

The second new piece is the "G-E Salesman's Handbook," which covers the complete line of G-E heating and cooling equipment. It contains, in an easy-to-carry, pocket-size binder, complete dimensions, ratings, and features of all current G-E units, as well as comparison charts "showing how the G-E line stacks up against competition."

Also new is a thermometer-moisture indicator combination which is given to the homeowner by the dealer's serviceman when he makes a furnace service call.

"Bearing the dealer's imprint, this premium constantly keeps the homeowner aware of temperature and humidity conditions in his home, making him more aware of how hot and humid his house often gets . . . which leads to air conditioning sales," it was pointed out.

To encourage their servicemen to leave these thermometers when making furnace calls, dealers are making special awards to their servicemen turning in leads resulting in add-to-cooling sales.

The last of the new items offered is the "Bell Ringer" direct mail campaign. Consisting of three mailings, this "lead-getter" carries the dealer's imprint, and features reply cards returnable to him.

"Each mailing makes an offer," it was explained. "One offers an efficiency check of the homeowner's present heating equipment. (This puts the dealer inside the home at the prospect's request.)

"Another mailing piece offers a brand-new booklet of helpful heating information to people whose furnaces are more than five years old. (Requesting this automatically identifies a prospect as one whose equipment may need replacing.)

"The third mailing offers a choice of the efficiency check or booklet."

Ramsdell said that any G-E dealers interested in obtaining one or all of these items should contact his General Electric heating and cooling distributor.

Air Conditioning To the Rescue

Hot, Sticky 'Igloo' Wasn't for These Eskimos Staying Way Down South In Canada

DAYTON — On these torrid summer nights, there's nothing worse than tossing and turning in a hot, sticky igloo. For that, you can take the word of a couple of itinerant Eskimos named Kiawak and Eeyeevudluk.

But, the two are spending a pleasant summer in the "South," after all—thanks to the Airtemp Div. of Chrysler Corp.; Therm-O-Rite Products, Ltd., Toronto, Ont., Can., Chrysler distributor; and Sutherland-Shultz Co., Ltd., Kitchener, Ont., Chrysler dealer.

The two Eskimos are the stone-carving stars of an Eskimo exhibit in Stratford, Ont., which is also the scene of the famed Shakespearean Festival. The exhibit had hardly gotten under way when the two youths let it be known through their translator that they had had enough of the Canadian tropics —the temperature was 90 with humidity to match.

A life-size igloo didn't help, either, since it was constructed of foam plastic.

Hearing of the Eskimo's plight, Steve Menich, sales manager of Sutherland-Schultz in nearby Kitchener, got together with E. B. (Blake) Heathcote, general sales manager for Therm-O-Rite. The latter, in turn, talked it over with Chrysler officials in Dayton. Result was a 5-ton packaged air conditioner contributed by Chrysler for the duration of the 10-week exhibit.

All is now cool and serene in Stratford. The air conditioned Eskimos are pleased with the whole thing, including the publicity they are receiving.

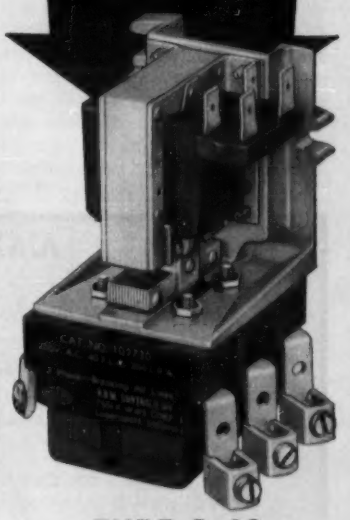
PROFILE OF A DISAPPOINTED CITY

The Case History of a city which tried heat pumps.

Read it in the Sept. 21 Special Heat Pump Issue

RBM

makes another advanced contribution to the air conditioning industry!



TYPE S-40 CONTACTOR

UL Listed — File No. E-12139

Latest addition to the RBM control family specially engineered for the air conditioning industry is the S-40 Contactor. More powerful than its S-30 teammate, the S-40 also exceeds rigid requirements of the industry's largest users. Positive contact action. No "kiss" position.

The performance-proven RBM Type S-30 Contactor

RATINGS AVAILABLE

Contact Ratings	S-40	S-30
250 V.	40 Amp. continuous 200 Amp. inrush	30 Amp. continuous 180 Amp. inrush
440/550 V.	20 Amp. continuous 100 Amp. inrush	15 Amp. continuous 90 Amp. inrush
Contact terminals	Screw or solderless type connector	Screw type

Other Specifications of S-40 and S-30

Coil terminals: double quick connect, screw type, or lead wires.

Coil ratings: 6 to 230 V. A.C.—50/60 cycles.

Pole arrangement: 2 or 3 poles (2 dummy wiring terminals available on 2 pole device).

Consult your RBM Product Application Engineer or Write for Bulletins C7 and C10

RBM CONTROLS DIVISION

ESSEX WIRE CORPORATION

Logansport, Indiana

FACTORIES: Peru, North Manchester and Logansport, Indiana

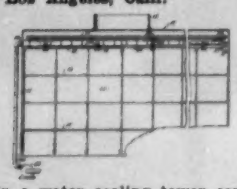
PATENTS

Week of May 12 (Concluded)

2,886,296. REFRIGERATING APPARATUS. Lee A. Wright, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

5. In a heat exchanger, fluid conduit means including spaced tubes, fin means having a slot therein for receiving a pair of said tubes and tapered wedge means between said tubes for wedging said tubes into firm mechanical contact with the walls of said fin slot.

2,886,126. SCAVENGABLE WATER DELIVERY DUCTS FOR COOLING TOWERS. James G. De Flon, Whittier, Calif., assignor to The Fluor Corp., Ltd., Los Angeles, Calif.



3. In a water cooling tower containing a vertically extending cooling chamber within which water passes downwardly in contact with rising air, the combination comprising a conduit extending laterally within the upper portion of said chamber, said conduit having spaced therealong in the direction of water flow therein a plurality of relatively restricted outlets for distributing water from within the conduit into the rising air and a relatively large outlet spaced beyond the restricted outlets. . . .

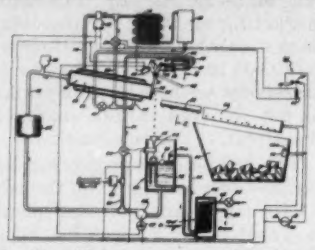
Week of May 19

2,886,952. APPARATUS AND METHOD OF LOWERING ICE-BUCKLED COLD ROOM FLOORS. Alonzo W. Ruff, York, Pa., assignor to V. C. Patterson & Associates, Inc., York, Pa.

1. The method of lowering the earth laid floor of refrigerated rooms or portions of said floor, which has or have been buckled upwardly by the formation of ice accumulations in the subjacent earth, the steps comprising: adjacent the buckled areas, forming a plurality of substantially vertical holes through said floor, and into the subjacent frozen earth, said holes being only slightly larger in cross-section than the cross-section of electrical heaters to be later inserted therein. . . .

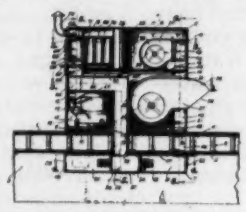
2,886,954. ICE MAKING APPARATUS. Joseph R. Batteiger, Los Angeles, Calif.

8. Ice making apparatus including a plurality of freezing compartments each inclined to the horizontal and each having its inlet disposed above its outlet, a refrigerating system associat-



ed with said freezing compartments, an electric control circuit for causing said refrigerating system to warm the walls of said freezing compartments, a corresponding plurality of pivotally mounted flap cover members for the respective outlets of said freezing compartments each having an aperture. . . .

2,886,955. AIR CONDITIONING SYSTEM. Carl S. Bauman, New York, N. Y., assignor to Air Conditioning, Inc.

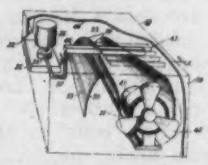


1. An air conditioning system comprising, a housing having means for securing it to a roof structure of a room space to be conditioned, said housing having top, bottom, side and end walls, a partition in the housing dividing it into two compartments, one of said compartments having openings in the side wall portions thereof, refrigerant condensers disposed in said one compartment in overlying relation to said side openings, cover means movably mounted on the housing to cover said side openings and movable to open said openings, said cover means in open position providing a protector eave shading said condensers. . . .

2,886,956. EVAPORATOR UNIT WITH CONDENSATE COLLECTING MEANS. Joseph D. Loveley, North Dayton, Ohio, assignor to Chrysler Corp., Highland Park, Mich.

1. A frame structure for supporting a pair of evaporator coils and collecting condensate therefrom comprising first and second oppositely disposed, elongated side walls each having a generally flat rectangular plate portion with an inner edge and an outer edge, said inner edges being substantially parallel and said side walls being spaced from each other to define an opening therebetween to accommodate an upward movement of air therethrough, said plate portions diverging upwardly and being adapted to serve as supports for a pair of evaporator coils. . . .

2,886,967. EVAPORATIVE AIR COOLERS. Samuel A. Kesselman, Lauralton, N. Y.

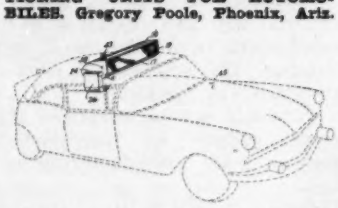


An evaporative air cooling apparatus comprising in combination an enclosure including end walls and a top, a horizontally disposed heat exchanger element having a plurality of alternate ridges and grooves extending longitudinally within said enclosure, said element being formed of a single sheet of heat conducting material that is corrugated to provide the aforesaid ridges and grooves and the upper side of which is provided with a moisture retaining material. . . .

2,886,958. FREEZING DEVICE. Arthur J. Frei, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

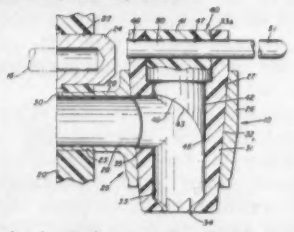
A freezing device comprising in combination, a tray adapted to contain a body of water to be frozen provided with a rim and having a grid structure disposed therein, said grid structure including a longitudinal wall and a plurality of spaced apart transverse walls interlocked therewith dividing the interior of said tray into rows of ice block forming compartments, said longitudinal wall having an integral stationary projection at one end thereof extending over the top of the rim on said tray. . . .

2,887,031. REMOVABLE AIR CONDITIONING UNITS FOR AUTOMOBILES. Gregory Poole, Phoenix, Ariz.



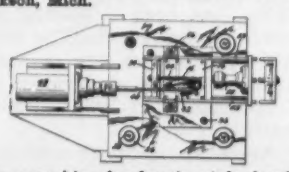
2. In an air conditioning unit for use with an automobile having a permanent top and windows, a housing adapted to be removably secured to the automobile top and having an air intake opening formed on the forward side thereof, a reservoir positioned within said housing adapted to contain a cooling liquid and spaced from the walls thereof to define therewith an upper air inlet chamber and a lower cooling chamber, said air inlet chamber communicating with said air intake opening for receiving air upon forward motion of said automobile and including an air exit throat formed between said housing and reservoir adjacent the rearward side of said reservoir. . . .

2,887,072. DISCHARGE VALVE FOR ICE CREAM MACHINES. Roger W. Watkins, Akron, Ohio.



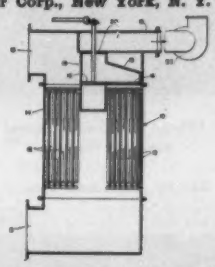
1. A discharge valve for low temperature fluids, comprising; an open ended hollow cylindrical support having a supply conduit provided in the wall portion thereof; a complemental cylindrical hollow sleeve having an axial length thereof concentrically journaled within said support and having an aperture provided in on wall thereof. . . .

2,887,144. TUBE BENDING MACHINE HAVING PRESSURE AND BACK UP RAMS. Walter P. Hill, Detroit, Mich., assignor to Aeroquip Corp., Jackson, Mich.



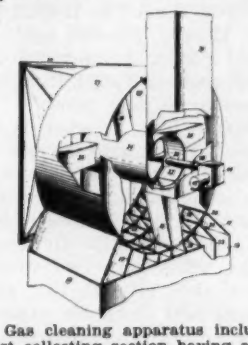
In a machine for forming tube bends up to 180° from tube section pre-filled with a malleable filler medium for holding the tube section against collapse during bending, support structure, die structure defining a tubular curved bend of 180°. . . .

2,887,175. PURGING CONTINUOUSLY ENERGIZED ELECTROSTATIC PRECIPITATOR. Hans Klemperer, Belmont, Mass, assignor to Apra Precipitator Corp., New York, N. Y.



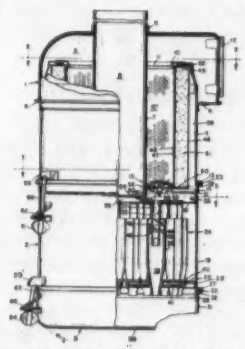
1. An electrostatic dust precipitator having a housing containing a plurality of contiguous banks of collecting electrodes, inlet and outlet means for causing simultaneous traversal of said electrode banks by a main stream of dust laden gas to effect the removal of dust particles therefrom; a cleaning hood movable relatively to said banks for aligning it with each electrode bank in succession to isolate the electrode banks from the main gas outlet for cleaning successively. . . .

2,887,176. PURGE MEANS FOR RECTANGULAR PRECIPITATOR. Peter Hodson, Wellsville, N. Y., assignor to Apra Precipitator Corp., New York, N. Y.



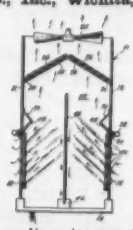
1. Gas cleaning apparatus including a dust collecting section having a rectangular housing divided into banks of collecting compartments of an electrostatic precipitator by parallel division plates; an outlet section superposed on the collecting section and divided into a series of converging compartments having ported ends which terminate in a perforate arcuate surface; an imperforate arcuate surface continuing from said perforate surface to form therewith a cylindrical duct member. . . .

2,887,177. AIR CLEANER CONSTRUCTION. Mark G. Mund and Dale K. Anderson, Minneapolis, Minn., assignors to Donaldson Co., Inc., St. Paul, Minn.



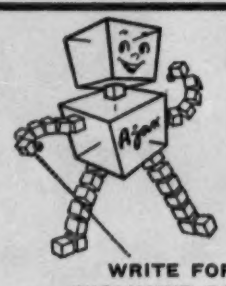
1. An air cleaner comprising top and bottom end sections and an intermediate section, said intermediate section having an air inlet and an air outlet and including a primary air-dust separator interposed between said inlet and outlet, an air inlet passage in one of said end sections communicating with said inlet of the intermediate section. . . .

2,887,301. INDUSTRIAL WATER COOLING TOWER. Fred C. Koch, Wichita, Kan., assignor to Koch Engineering Co., Inc., Wichita, Kan.



1. In a cooling tower, the combination comprising an enclosure having opposed side openings in direct communication with the surrounding atmosphere, spray means arranged in batteries disposed in said opposed side openings for ejecting liquids to be cooled into said enclosure in an upward direction, the spray means of each battery being in substantially the same vertical plane. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.



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AIR CONDITIONING engineer for design and development of package type heat pumps through 5 hp. wanted by West Coast manufacturer. Must be experienced in the design, development, and testing of residential air conditioners and capable of initiating and carrying a design to completion. State age, past experience, education and salary requirements. Our engineers know of this ad. Reply to BOX A6344, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER wanted who is capable of designing small refrigeration systems for household refrigerators and freezers and commercial cabinets. We purchase compressors but the man we choose must be familiar with design of high-side assemblies and sizing of evaporators and fans for plated or finned coil type. Should have experience with automatic defrost methods. The man who demonstrates ability can look forward to assuming chief engineers post in future. Applicants should give complete resume of education, experience, and salary requirements. Reply to BOX A6347, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER — Major national brand air conditioning manufacturer has opening for full line sales representative in metropolitan Los Angeles market. Attractive base salary, bonus, and expenses with real future opportunity. Proven sales experience and local trade following mandatory qualifications. Send brief resume to BOX A6348, Air Conditioning, Heating & Refrigeration News.

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FOR SALE — Refrigeration Service business operated from shop at home. No overhead, one or two man operation. The total price 13,500.00. Includes shop equipment, refrigeration parts, tools and furnished home. Cash required 6,900.00 balance at 6%. This operation will net from 5 to 10 thousand per year. Am retiring. Write, P. W. POWERS, 9th St. at 6th Avenue, Vero Beach, Florida.

ATTENTION MANUFACTURERS! New automatic commercial ice cube machine to be marketed. Designer interested in selling or licensing on royalty basis. Simplicity of operation with fewer moving parts assures crystal clear ice. Built with the consumer and serviceman in mind. Also adaptable to domestic units. BOX A6350, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

CHRYSLER (1)

Chrysler Corp.
Detroit 31, Mich.

Four types of factory-installed air conditioners are offered for most models of Chrysler's five lines of 1959 cars — Imperial, Chrysler, DeSoto, Dodge, and Plymouth.

The four types of systems are:

(1) Front-end unit (Figs. 1 and 2).

(2) Trunk unit.

(3) Combination front and trunk units.

(4) Combination front and roof units (used only for station wagons).

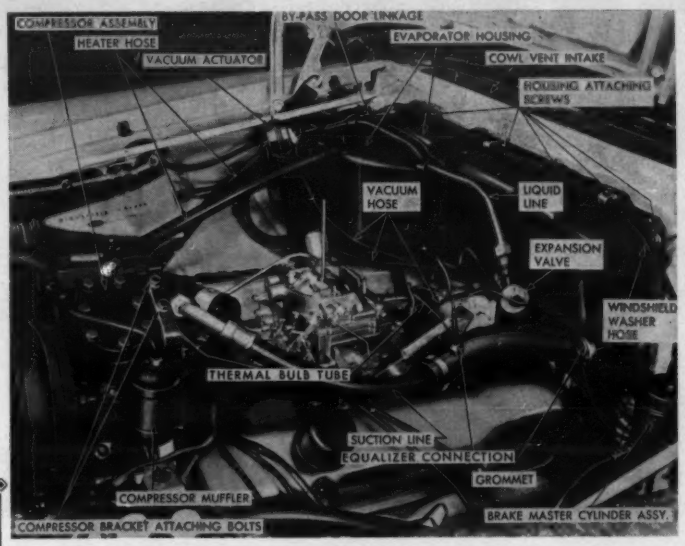

FIG. 1—Location of engine compartment components of 1959 Chrysler Corp. front-end and dual unit systems.

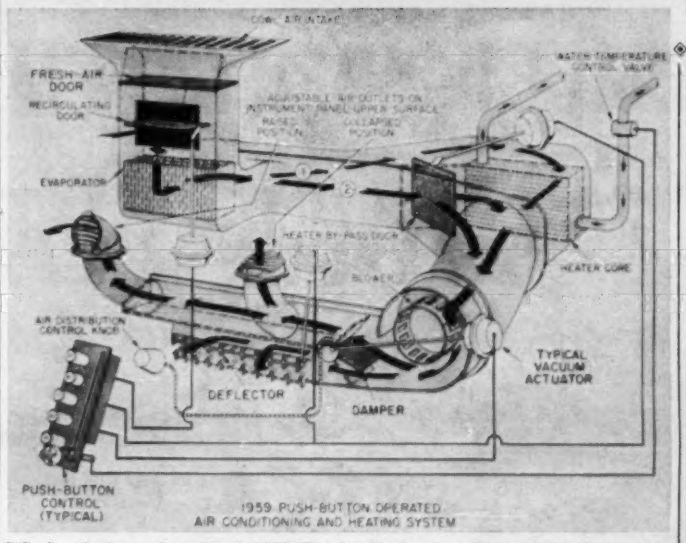

FIG. 2—Air flow schematic of 1959 Chrysler front-end cooling and heating system.

The 1959 Chrysler units, except for the trunk model, continue with the basic principle of controlling temperature by means of a reheat system in which amount of cooling depends on temperature of heater core through which approximately 25% of the air flows after passing through evaporator.

Vacuum-operated dampers are provided in the 1959 systems.

Refrigerant-12 is used throughout the line.

Compressor

The Airtemp V-type compressor is employed on all models.

It is driven through a magnetic clutch. Clutch is used to turn the system on or off and is cycled by a thermostat to prevent icing of the evaporator.

Condenser

Condenser is mounted in front of the car radiator.

Combination receiver, drier, sight glass, and moisture indicator is located beside or close to condenser.

The "dry eye" moisture indicator turns pink or orchid if the system is wet.

A "sub-cooler" is also employed on the DeSoto Fireflite and Firedome, the Chrysler Saratoga and New Yorker, and Imperial cars. This is a finned copper tube connected between the receiver outlet and the liquid line to the evaporator. The subcooler is looped beside and below the condenser. Its purpose is to provide additional cooling of the liquid refrigerant, thereby increasing capacity of the evaporator.

Evaporator Assembly

Evaporator assembly of the front-end unit (the basic unit in the 1959 Chrysler line) is mounted on the dash panel. The evaporator and hot water heater core are housed on the engine compartment side of the panel. Air distribution duct and blower motor are on passenger side of the panel.

Thermostatic expansion valve (with non-adjustable superheat setting) is found on engine compartment side of the front-end unit.

Front end evaporator-heater assembly (Fig. 2) also includes dampers and vacuum actuators for selection of 100% outside air or 100% recirculated air, cooling or heating, windshield defrosting, and airflow within car.

Most of the conditioned air is discharged through two outlets on the instrument panel with some coming from floor outlets when the system is on cooling operation.

Thermostat which cycles clutch to prevent icing of evaporator is also part of the front-end unit evaporator assembly.

Roof and trunk unit evaporator assemblies each consist of evaporator coil, non-adjustable thermostatic expansion valve, and two blowers.

When used as the only evaporator assembly, the trunk unit also has a thermostat which cycles the magnetic clutch to prevent icing of the evaporator coil.

(To Be Continued)

General Instrument Announces Formation Of Thermoelectric Div.

NEW YORK CITY — Formation of a thermoelectric division has been announced by General Instrument Corp.

The new division occupies facilities at the electronic company's Newark, N. J., headquarters. Melvin Barmat is division manager.

The division is already working on devices to generate electricity without moving parts by applying heat to the juncture of certain semi-conductor materials, it was reported. Its efforts are also directed to the development of cooling and heating through applying electricity to thermoelectric materials.

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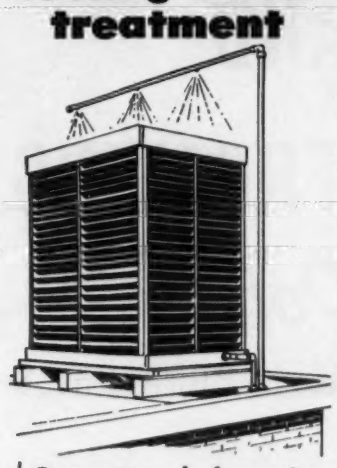

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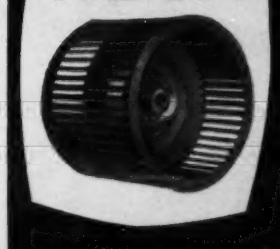

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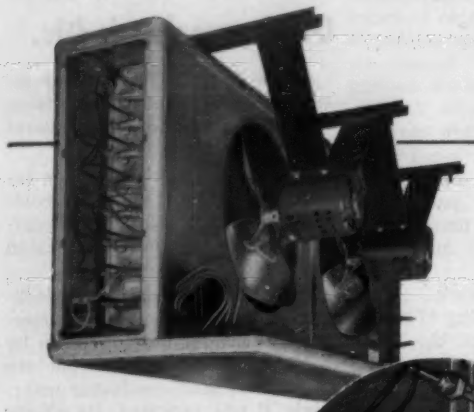

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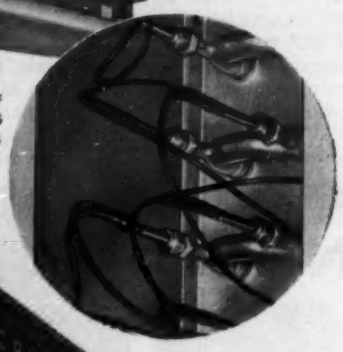

CLOSE-UP VIEW OF MECHANICAL SEALING OF HEATING ELEMENTS

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